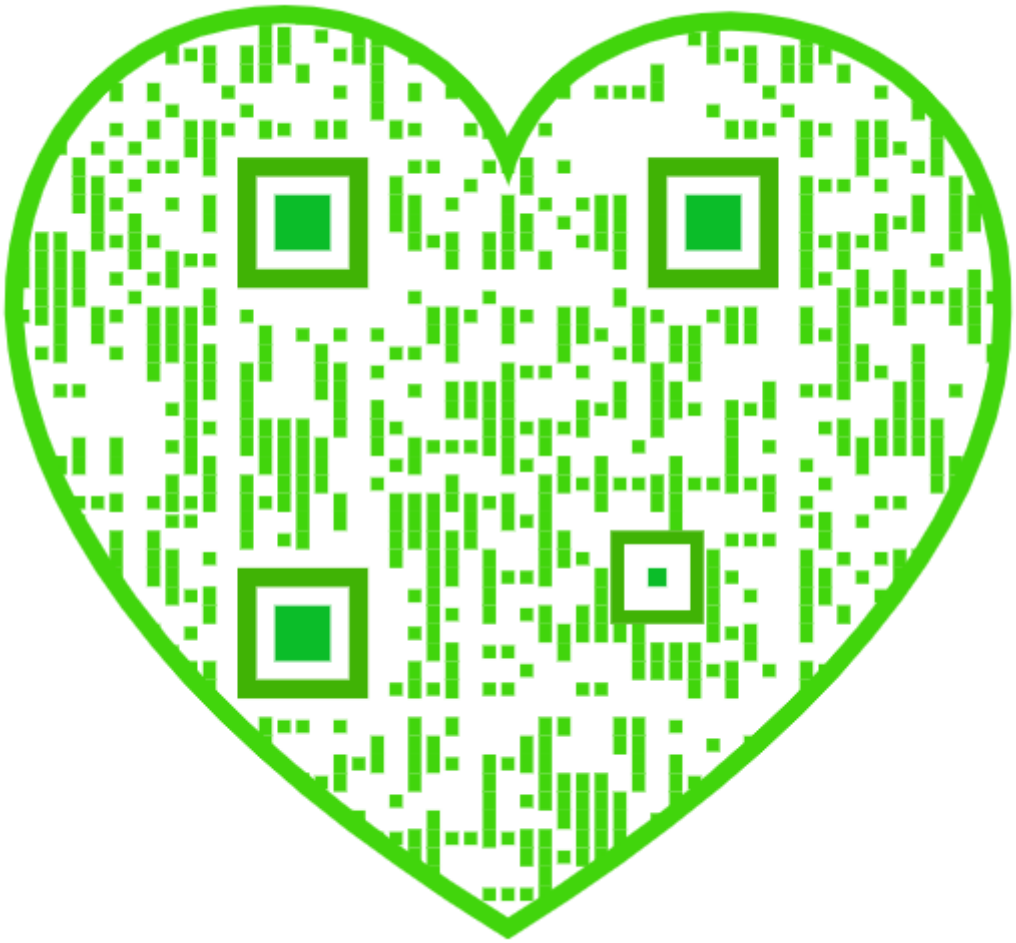


PUBLIC LIBRARY

The ARCHITECT & ENGINEER

JULY 1923

Published in San Francisco
50 cents a copy - $2.50 a year

The highest quality plumbing costs less in the long run

TRADE MARK REGISTERED

Specify **PACIFIC**

PLUMBING FIXTURES

Pacific Sanitary Manufacturing Co.

Main Office: 67 New Montgomery St., San Francisco

Factories: Richmond and San Pablo, California

No leaks,
no roof troubles
Specify
PABCO
10 & 20 year
ROOFS
which require the use of
FLOATINE

The improved roof asphalt that will not soften run, leak or slide.

The PARAFFINE COMPANIES, Inc.

A $12,000,000 Corporation Operating 16 Plants on the Pacific Coast

San Diego Los Angeles San Francisco
Oakland Portland Seattle

Waldorf Court
9th and Schuyler Sts., Portland, O.
Architects—Goodrich & Goodrich

The One Finish for Cement and Stucco

BAY STATE Brick and Cement Coating is the one ideal finish for stucco and cement. This coating beautifies a house and at the same time waterproofs it.

Dingy and leaden walls take on a new, artistic appearance. Weathered and drab concrete assumes a beauty that is striking.

Bay State Brick and Cement Coating is not merely a surface paint. This master finish creeps into the pores of the walls and seals them against all dampness. The hardest rain cannot beat through a coating of Bay State.

Bay State Brick and Cement Coating comes in a complete range of colors and in a pure, rich white.

Send for samples and booklet to-day.

WADSWORTH, HOWLAND & CO., Inc.
New York BOSTON Philadelphia

Graham Hambly & Son, 1333 E. 7th St., Los Angeles, Cal.
James Hambly & Son, 229 Clay St., San Francisco, Cal.
Jones-Moore Paint House, San Diego, Cal.
McCracken-Ripley Building Materials Co., 45 Fourth St., Portland, Oregon.
F. T. Crowe & Co., 508 W. Lake Ave., Seattle, Wash.

BAY STATE
Brick and Cement Coating

Baerresen and Porter, Cheyenne, Wyo., Architects

Cheyenne Construction Co., Electrical Contractors

Holtzer-Cabot

HOSPITAL SIGNAL SYSTEMS

Laramie Co. Memorial Hospital at Cheyenne, Wyo., is another of the great many modern hospitals Holtzer-Cabot equipped.

Fifty years' leadership in the manufacture and development of Hospital Signal Systems is a protection that the architect, engineer, the hospital management and its working staff should not overlook.

This is why an ever-increasing number of the leading architects and engineers are specifying Holtzer-Cabot Systems exclusively.

Architects, engineers and members of building boards are invited to write for two brochures entitled "Signal Systems for Hospitals" and "Signal Systems for Schools."

Our engineers are at the service of architects and their clients at all times. Just call on our nearest office.

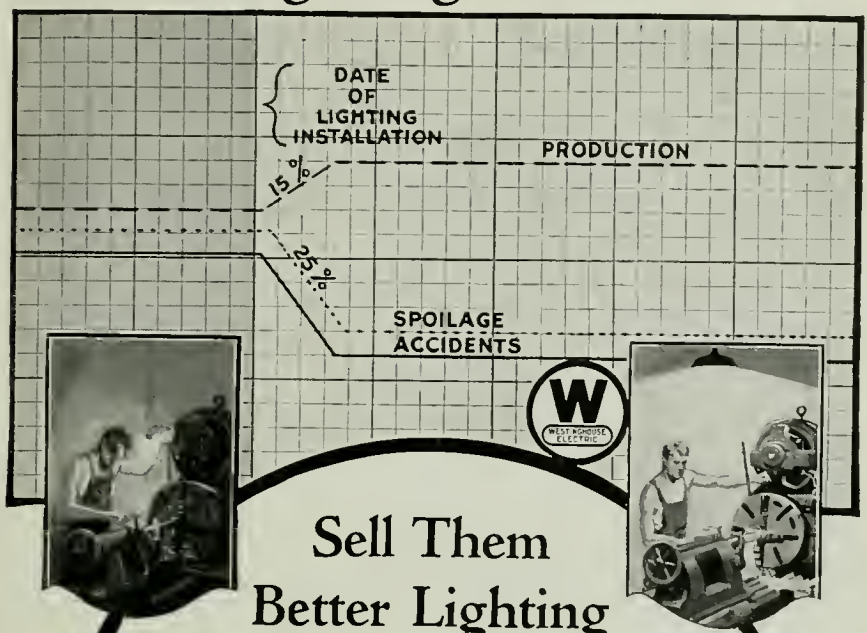
The Holtzer-Cabot Electric Co.

Electric Signaling Systems

Home Office and Factory:
125 ARMORY ST., BOSTON, MASS.

BRANCH OFFICES
Chicago, Ill.: 6161-65 So. State St.
New York, N. Y.: 101 Park Ave.
Philadelphia, Pa.: 807 Otis Bldg.
Detroit, Mich.: 1051 Book Bldg.
Cleveland, Ohio: 517 Union Building
Baltimore, Md.: 1104 Union Trust Bldg.
San Francisco, Cal: 408 Claus Spreckels Bldg.
Minneapolis, Minn.: 627 Metropolitan Life Bldg.

Better Lighting DOES PAY



Sell Them Better Lighting

Better lighting does pay.

With literally hundreds of installations of industrial lighting from which to draw, we have prepared this chart showing three average results where proper illumination has replaced old fashioned lighting methods.

Manufacturers are spending thousands of dollars annually to prevent accidents, reduce spoilage, and minimize the number of rejects.

Scientific methods of lighting, specified and built into new factories, assures savings to the manufacturer, reduce to a minimum his accidents, spoilage and rejects, and further establish the reputation of the architect who planned the building.

For your convenience industrial illumination engineers, located in every Westinghouse district office, will be glad to lay out lighting specifications for you and to assist you in selling the better lighting plan to your client.

For catalogues or consultation, address any Westinghouse office.

WESTINGHOUSE ELECTRIC & MFG. CO.

East Pittsburgh, Penn.

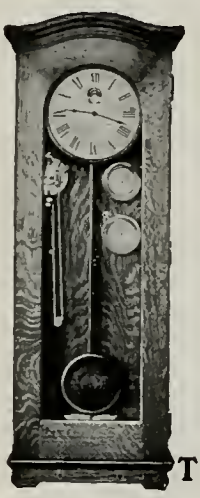
Western District Offices

Denver Los Angeles San Francisco Seattle

Westinghouse

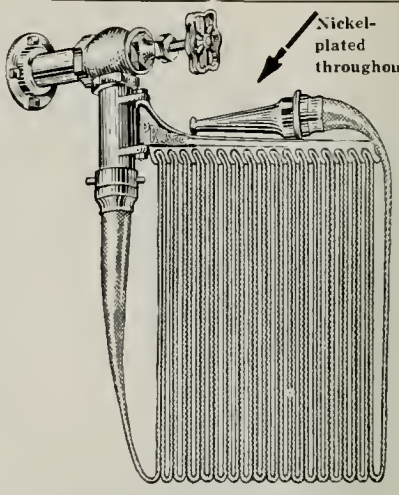
When writing to Advertisers please mention this magazine.

"Standard"



THIRTY-SIX years' experience manufacturing and installing Electric Time Keeping Systems. Helpful engineering data cheerfully furnished architects, engineers and school boards insuring satisfactory results, and a direct factory branch office completely equipped to render immediate service.

The Standard Electric Time Company
461 Market St., San Francisco, Cal.
Telephone Sutter 241



PRASCO PINLESS
SWINGING HOSE RACK

For 50, 75, 100 ft. Underwriters Unlined Linen Hose

No pins to break, bend, or jam
Hose pays off one loop after the other

Plant Rubber & Asbestos Works
537 Brannan St. San Francisco Tel. Sutter 2100

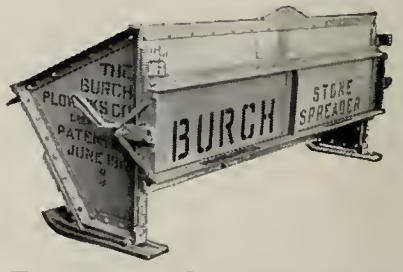
Power and Heating BOILERS

STEEL TANKS — BREECHINGS
STACKS — STRUCTURAL STEEL
AND PLATE WORK

MAIN IRON WORKS
MAIN OFFICE AND WORKS
7th, Daggett and 16th Streets
SAN FRANCISCO, CAL.
Telephone Market 752-755

CONSTRUCTION ERBCO EQUIPMENT

Saves Its Cost



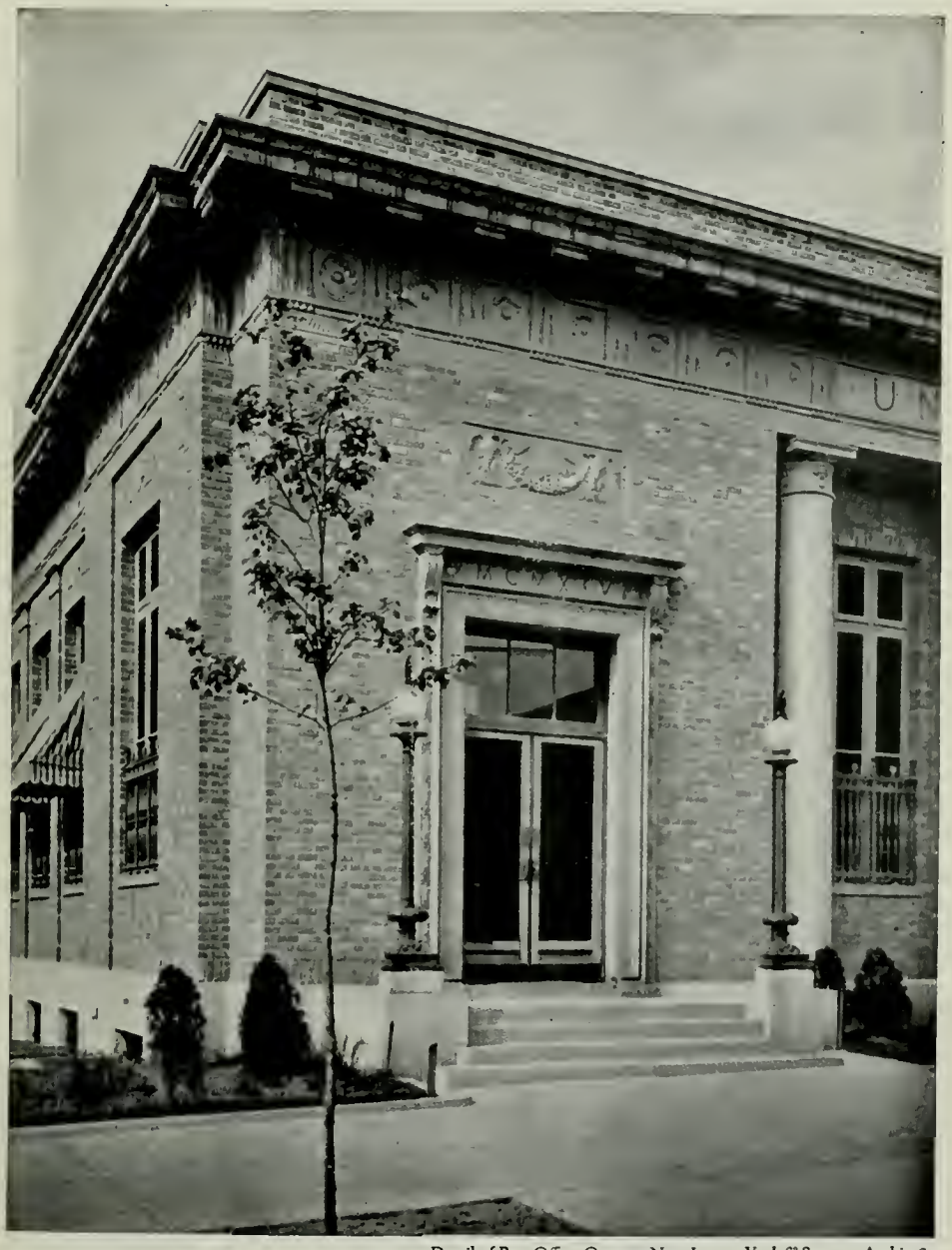
BURCH SPREADER

Users say it saves its cost the first mile—and it does better work. Stone, slag and gravel are put on the roadway at the required depth and width, with savings in labor, time and material that represent profits.

EDWARD R. BACON COMPANY

SAN FRANCISCO
SACRAMENTO
LOS ANGELES
FRESNO

The Architect and Engineer — July, 1923 — Vol. LXXIV, No. 1. Published monthly — $2.50 a year, 627 Foxcroft Building, San Francisco, California. Entered as second-class matter, November 2, 1905, at the Post Office at San Francisco, California, under the act of March 3, 1879.



Detail of Post Office, Orange, New Jersey. York & Sawyer, Architects

ANOTHER splendid example of the beautiful effects that can be economically obtained through the use of standard sized face brick. There are many others in "Architectural Details in Brickwork," a collection of over one hundred examples of artistic brickwork, selected from various parts of the country. The half-tone plates, issued in three series, each in an enclosed folder ready for filing, will be sent to any architect requesting them on his office stationery. Address, American Face Brick Association, 1759 Peoples Life Building, Chicago, Illinois.

Crystal Palace Market, San Francisco, California
D. Coleman, Architect

CALIFORNIA STEEL WINDOWS

MADE IN CALIFORNIA U.S.A.

The "California Steel Windows" are a home industry product. The sash bars are rolled in South San Francisco by the Pacific Coast Steel Company. The windows are manufactured and warehoused in our plant on Tenth and Harrison Streets, San Francisco.

We carry a large stock of windows on hand, and make special sizes on short notice.

Michel & Pfeffer
Iron Works
HARRISON AND TENTH STREETS
SAN FRANCISCO, CALIF.

Architects' Specification Index

(For Index to Advertisements, see next page)

ASBESTOS MATERIALS
Johns-Manville Inc., of California, 500 Post street, San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.
Jones Bros. Asbestos Supply Co., Inc., 512 Second St., San Francisco.
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

ART METAL
Federal Ornamental Iron and Bronze Co., 16th St., and San Bruno Ave., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
California Artistic Metal & Wire Co., 349 Seventh street, San Francisco.

ARCHITECTURAL TERRA COTTA
Gladding, McBean & Company, Crocker Bldg., San Francisco.
Livermore Fire Brick Works, 604 Mission St., San Francisco.
Tropico Potteries, Inc., Glendale, Cal.

BANK FIXTURES AND INTERIORS
C. F. Weber & Co., 985 Market St., San Francisco.
Home Mfg. Co., 543 Brannan St., San Francisco.
Mullen Manufacturing Co., 64 Rausch St., San Francisco.
Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.

BANK SCREEN REFLECTORS
I. P. Frink, Inc., 77 O'Farrell Street, San Francisco.

BATHROOM ACCESSORIES
The Fairfacts Company, Inc., 234 W. 14th St., New York.

BEDS—WALL
California Wall Bed Co., 714 Market St., San Francisco.
Marshall & Stearns Co., Phelan Bldg., San Francisco.
Leverett T. Spaulding, 1041 Mission St., San Francisco.

BELTING AND PACKING
New York Belting and Packing Company, 519 Mission St., San Francisco.
H. N. Cook Belting Co., 401 Howard St., San Francisco.
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

BLACKBOARDS
C. F. Weber & Co., 985 Market St., San Francisco, Los Angeles and Reno, Nevada.
Stewart Sales Co., 247 Rialto Building, San Francisco.
Wentworth & Co., 539 Market Street, San Francisco.

BLINDS—VENETIAN AND DIFFUSELITE
The J. G. Wilson Corporation, 621 North Broadway, Los Angeles.
Western Blind & Screen Company, factory, Los Angeles; San Francisco representatives, Edward C. Dehn, Hearst Bldg., and C. F. Webber Co.

BOILERS
Birchfield Boiler Company, Tacoma, Washington. See advertisement for Coast agencies.
Kewanee Boiler Company, Factory Branch, Exposition Building, San Francisco.
Kewanee Water Supply System, Simonds Machinery Co., 117 New Montgomery St., San Francisco.
Main Iron Works, 1000 Sixteenth Street, San Francisco.

BONDS FOR CONTRACTORS
Bonding Company of America, Kohl Bldg., San Francisco.
Globe Indemnity Co., 444 California St., San Francisco.
Fidelity & Casualty Co. of New York, Balfour Bldg., San Francisco.
William Healey & Son, 208 Crocker Building, San Francisco.

BOXBOARD FIBRE SHIPPING CASES
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

BRASS GOODS, CASTINGS, ETC.
H. Mueller Manufacturing Co., 635 Mission St., San Francisco.

BRICK FACE, COMMON, ENAMEL, GLAZED
Remillard Brick Company, Phelan Building, San Francisco.
Richmond Pressed Brick Co., Sharon Bldg., San Francisco. Plant at Richmond, Cal.
Livermore Fire Brick Works and California Brick Co., 604 Mission St., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.
Cannon & Co., Sacramento; and 77 O'Farrell St., San Francisco.

BRICK & CEMENT COATING
Armorite and Concreta, manufactured by W. P. Fuller & Co., all principal Coast cities.
Minwax Co., Inc., 22 Battery St., San Francisco and 653 S. Clarence St., Los Angeles.
The Paraffine Companies, Inc., 34 First St., San Francisco.
R. N. Nason & Co., 151 Potrero Ave., San Francisco.
Wadsworth, Howland & Co., Inc., Jas. Hambly & Son, 1333 E. 7th St., Los Angeles, and 229 Clay St., San Francisco.

BRICK STAINS
Samuel Cabot Mfg. Co., Boston, Mass., agencies in San Francisco, Oakland, Los Angeles, Portland, Tacoma and Spokane.
Armorite and Concreta, manufactured by W. P. Fuller & Co., all principal Coast cities.

BUILT-IN FIXTURES
Built-In Fixture Company, San Pablo Ave., near University Ave., Berkeley, and Hoosier Store, Pacific Building, San Francisco.

BUILDERS' HARDWARE
Joost Bros., agents for Russell & Erwin Hardware, 1053 Market St., San Francisco.
The Stanley Works, New Britain, Conn., Coast sales offices, San Francisco, Los Angeles, and Seattle, Wash.
Palace Hardware Company, Agents Corbin goods, 581 Market St., San Francisco.
Richards-Wilcox Mfg. Co., Aurora; Ewing-Lewis Co., 626 Underwood Bldg., San Francisco.

RALSTON IRON WORKS, INC.

ESTABLISHED 1876

Office and Works
20th and Indiana Streets
SAN FRANCISCO
Phone Mission 5230

Structural Steel

Representing
Pauly Jail Building Co.

An Index to the Advertisements

	Page
All-in-One Company	138
American Face Brick Ass'n	5
American Mail Chute Co.	157
American Marble and Mosaic Co.	42
American Rolling Mill Co.	43
American Window Glass Co.	129
Aristo Painting Co.	160
Atlas Heating & Ventilating Co.	150
Atlas Portland Cement Co.	39
Babcock Co., C. B.	48
Bacon, Edward R., Co.	4
Badt-Falk & Co.	149
Bartlett, John M.	145
Barlith Co.	147
Barrett & Hilp	148
Bass-Hueter Co.	33
Beckwith, Herbert	145
Beeco	159
Berkeley Electric Co.	158
Birchfield Boiler Co.	40
Browne - Langlais Electric Co.	158
Bowser & Co.	29
Built-in-Fixture Co.	136
Bull Dog Floor Clip Co.	17
Bunting Iron Works	47
Butte Electric & Mfg. Co.	158
Buttonlath Mfg. Co.	121
Byron Jackson Pump Co.	136
Cabot, Samuel Co.	155
Cadwallader, Gibson Co.	132
California Artistic Metal & Wire Co.	156
California Brick Co.	3rd Cover
California Steam & Plumbing Supply Co.	163
California Pottery Co.	40
California Stucco	133
California Wall Bed Co.	141
Carter Bloxonend Flooring Co.	143
Central Electric Co.	161
Central Iron Works	156
Clinton Construction Co.	154
Coast Rock & Gravel Co.	164
Cobbledick-Kibbe Glass Co.	145
Coen Company	46
Coleman, Alex.	150
Columbia Marble Co.	142
Cook Belting Co.	42
Cook Marble Co.	13
Critall Casement Window Co.	31
Crane Co.	157
Cyclops Iron Works	154
Del Monte Properties Co.	140
Detroit Steel Products Co.	24
Dierssen Co., D.	34
Direct Line Telephone Co.	158
Doell, Carl T.	150
Dolan Wrecking Co.	160
Drendell Electric Co.	159
Electric Appliance Company	14
Elevator Supplies Co., Inc.	126
Ellery Arms Co.	161
Evans, W. L.	44
Federal Ornamental Iron Works	156
Fess System Co.	46
Fidelity & Casualty Co.	161
Fink & Schindler	160
Fire Protection Eng. Co.	154
Fire Retardent Products Co.	152
Flagg, Edwin H. Scenic Co.	146
Frink, I. P., Inc.	122
Fuller & Goepp	143
Fuller, W. P. & Co.	28
Garnett Young & Co.	14
General Fireproofing Co.	3rd Cover
Gilley-Schmid Co.	144
Gladding, McBean & Co.	45
Globe Indemnity Co.	149
Golden Gate Iron Works	156
Grinnell Company of Calif.	154
Gunn, Carle Company	30
Haines, Jones & Cadbury Co.	139
Handy Self - Cleansing Flush Valve Co.	34
Hannah Bros.	146
Hauser Window Company	36
Haws Sanitary Faucet Co.	152
Hermann Safe Co.	149
Herrick Iron Works	156
Hillard, C. J.	142
Hill, Hubbell & Co.	134
Hoff Magnesite Co.	133
Holbrook, Merrill & Stetson	32
Holtzer-Cabot Electric Co.	2
Home Mfg. Co.	160
Hulting, Hurst & Hulting	154
Hunt & Co., Robert W.	133
Hunter & Hudson	144
Illinois Engineering Co.	154
Indiana Limestone Ass'n	23
Ind. Automatic Spk'r Co.	10
Johnson, S. T.	47
Johns, Manville Co.	161
Johnson Service Co.	150
Jones Bros.	161
Joost Bros.	144
Judson Mfg. Co.	156
Kennedy Valve Co.	121
Kewanee Boiler Co.	132
Kinnear Mfg. Co.	29
Kissel, I. R.	146
Knowles, A.	148
Lannom Bros.	160
Larson-Siegrist Co., Inc.	145
Lawson & Drucker	150
Lawton & Vezey	146
Leather Mat Mfg. Co.	141
Littlefield, R. W.	148
Lindgren Company	40
MacGruer & Simpson	36
MacRorie-McLeran Co.	152
Main Iron Works	4
Magner Bros.	144
Mangrum & Otter	24
Marshall & Stearns	44
McCabe Hanger Mfg. Co.	26
McCray Refrigerator Co.	147
McLeran, R. Co.	149
McLaughlin, Jas. L.	160
Myers & Schwartz	151
Michel & Pfeffer Iron Works	6
Minwax Co., Inc.	134
Montague Range & Furnace Co.	130
Monson Bros.	146
Mortenson Con. Co.	156
Mott Company	159
Mueller, H. Mfg. Co.	47
Mullen Mfg. Co.	160
Musto Sons-Keenan Co.	13
Nason, R. N. & Co.	12
National Mill & Lumber Co.	32
National Terra Cotta Society	123
NePage, McKinney Co.	158
Newberry Electric Co.	158
Newman, H. G.	150
New York Belting Co.	163
Nordstrom, David	148
Oak Flooring Bureau	19
Ocean Shore Iron Works	162
Old Mission Portland Cement	35
Otis Elevator Co.	164
Pacific Coast Steel Co.	162
Pacific Elevator Company	162
Pacific Electric Clock Co.	158
Pacific Fire Extinguisher Co.	18
Pacific Foundry Co.	133
Pacific Gas & Electric Co.	20
Pacific Mfg. Co.	145
Pacific Materials Co.	48
Pacific Plumbing Fixture Co.	2nd Cover
Pacific Rolling Mills	22
Palace Hardware Co.	36
Palm Iron Works	22
Paraffine Companies	1
Parker, K. E. Co.	148
Pelton Water Wheel Co.	11
Peterson, Carl H.	149
Petrium Sanitary Sink Co.	140
Phillips, Chas. T. Co.	154
Picard, W. H.	150
Pittsburgh Water Heater Co.	144
Pope & Talbot	130
Plant Rubber & Asbestos Works	4
Potter Radiator Co.	34
Portland Cement Association	37
Quandt, A. & Sons	9
Ralston Iron Works	7
Randall Control Corp.	144
Ray Mfg. Co.	47
Raymond Granite Co.	25
Richmond Brick Co.	137
Remillard Brick Co.	161
Roberts Mfg. Co.	147
Robertson Co., H. H.	136
Rotary Oil Burner Co.	134
Ruud Heater Co.	144
Ryan, M. E.	18
Sandusky Cement Co.	125
Santa Fe Lumber Co.	130
Scott Co.	141
Schrader Iron Works	156
Simmons, O. M., Co.	12
Simonds Machinery Co.	42
Sloane, W. & J.	17
Smith & Egge Mfg. Co.	24
Sommer, I. M.	148
Soule, Edw. L. Co.	132
Spaulding, L. T.	160
Spencer Elevator Co.	149
S. & S. Tile Co.	154
Standard Electric Time Co.	4
Standard Fence Co.	149
Standard Varnish Works	9
Stanley Works	141
Steel Form Contracting Co.	148
Steffins-Lomax Co.	155
Stewart Sales Co.	16
St. John, Robert L.	16
Strable Hardwood Co.	38, 152
Sunset Lumber Co.	130
Tittle, H. S.	158
Thor Electric Shop	10
Toledo Scale Co.	11
Tokheim Oil Co.	134
Tompkins-Kiel Marble Co.	41
Tormey Co.	144
Tropico Potteries, Inc.	157
Trost, Robert	146
Truscon Steel Co.	30
Uhl Bros.	42
Union Construction Co.	159
United Alloy Steel Corp.	161
United Materials Co.	45
Universal Exhibits	162
U. S. Elaterite Products Co.	34
U. S. Metal Products Co.	27
Van Emon Elevator Co.	145
Van Fleet-Freear Co.	20
Vogt, Alfred	146
Vonnegut Hardware Co.	15
Vermont Marble Co.	142
Vukicevich & Bagge	148
Wadsworth, Howland & Co.	2
Wayne Tank & Pump Co.	128
Walter, D. N. & E. Co.	142
Weber, C. F. Co.	157
Wells, A. F.	145
Wentworth, F. W.	161
West Coast Porcelain Co.	Back Cover
Western Asbestos & Magnesia Co.	22
Western Blind & Screen Co.	21
Western States Seating Co.	145
Western Iron Works	22
Westinghouse Mfg. Co.	3
White Bros.	127
Wickwire Spencer Steel Corp.	40
Williams Radiator Co.	147
Wilson, J. G., Corp.	26
Wilson, W. F. Co.	150
Witt, G. E.	48
Zelinsky, D. & Co.	149

A. Quandt & Sons

OUR WORK IS THE BEST GUARANTEE OF THE QUALITY OF OUR SERVICE

Painters - Decorators

SINCE 1885

374 GUERRERO ST. **San Francisco**

3217 So. CENTRAL AVE. **Los Angeles**

ARCHITECTS' SPECIFICATION INDEX—Continued

BUILDING MATERIALS, SUPPLIES, ETC.
- Pacific Materials Co., Underwood Bldg., San Francisco.
- Waterhouse-Wilcox Co., 523 Market St., San Francisco.
- C. H. Jensen Co., Call Building, San Francisco.
- John R. Steffens-Lomax Co., Monadnock Bldg., San Francisco.
- The General Fireproofing Company, 20 Beale Street, San Francisco

BUILDING PAPER
- The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

BUILDING TILE (Burned Clay)
- California Brick Co., 604 Mission St., San Francisco.

CABINET MAKERS
- Home Manufacturing Company, 543 Brannan St., San Francisco.
- Mullen Manufacturing Company, 64 Rausch St., San Francisco.
- Lannom Bros. Mfg. Co., 5th and Magnolia Sts., Oakland.
- Pacific Mfg. Co., San Francisco, Los Angeles and Oakland.

CEMENT
- Atlas Portland Cement Co., agencies in all principal Coast cities.
- Best Bros. Keene's Cement Co., John R. Steffens-Lomax Co., Agents, Monadnock Bldg., San Francisco.
- Old Mission Portland Cement Co., Mills Bldg., San Francisco.
- Medusa Stainless White Cement, plain and waterproofed, carried in stock and sold by leading building supply dealers in California, Oregon and Washington.
- The Paraffine Companies, San Francisco, and principal Coast Cities.

CEMENT EXTERIOR WATERPROOF PAINT
- Armorite, sold by W. P. Fuller & Co., all principal Coast cities.
- Minwax Co., Inc., 22 Batery St., San Francisco and 653 S. Clarence St., Los Angeles.
- The General Fireproofing Company, 20 Beale Street, San Francisco

CEMENT STUCCO
- "California" sold by Atlas Mortar Company, Holbrook building, San Francisco.

CEMENT TESTS—CHEMICAL ENGINEERS
- Robert W. Hunt & Co., 251 Kearny St., San Francisco.

CLAY PRODUCTS
- California Brick Co. and Livermore Fire Brick Works, 604 Mission St., San Francisco.
- Cannon & Co., Sacramento, Cal.
- Gladding, McBean & Co., Crocker Bldg., San Francisco.
- Los Angeles Pressed Brick Co., Frost Bldg., Los Angeles.
- Tropico Potteries, Inc., Glendale, Cal.
- United Materials Co., Sharon Bldg., San Francisco.

CLOCKS—ELECTRIC TIME
- Pacific Electric Clock Co., 714 Wells-Fargo Bldg. San Francisco.
- Standard Electric Time Co., 461 Market St., San Francisco.

COLD STORAGE PLANTS
- Cyclops Iron Works, 837 Folsom St., San Francisco.

COMPOSITION FLOORS
- "Linotol" plastic flooring, Hill, Hubbell & Co., 115 Davis St., San Francisco; 410 San Fernando Bldg., Los Angeles.
- Western Asbestos Magnesia Company, 25 South Park, San Franciaco.
- Hoff Magnesite Co., San Francisco. Miller & Alf, 337 Monadnock Bldg., San Francisco, general agents.

CONCRETE BUILDING ACCESSORIES
- John R. Steffens-Lomax Co., 951 Monadnock Bldg., San Francisco.

CONCRETE OR CEMENT HARDENER
- Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
- The General Fireproofing Company, 20 Beale Street, San Francisco

CONCRETE MIXERS
- Foote and Jaeger mixers sold by Edward R. Bacon Co., 51 Minna St., San Francisco, also Los Angeles.

CONCRETE REINFORCEMENT
- Edw. L. Soule Co., Rialto Bldg., San Francisco.
- Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
- Clinton Welded Wire Fabric, Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.
- Judson Mfg. Co., 817-821 Folsom St., San Francisco.
- Pacific Coast Steel Company, Rialto Bldg., San Francisco.
- Triangle Mesh Fabric. Sales agents, Pacific Materials Co., 525 Market St., San Francisco.
- Truscon Steel Co., 709 Mission St., San Francisco.
- Badt-Falk Co., Call-Post Bldg., San Francisco.

CONDUITS
- "Sherarduct," Garnett Young & Company, 612 Howard St., San Francisco.

CONTRACTORS, GENERAL
- Barrett & Hilp, 918 Harrison St., San Francisco.
- Herbert Beckwith, Everson Bldg., Oakland.
- Larsen-Siegrist Co., Inc., 807 Claus Spreckels Bldg., San Francisco.
- The Lindgren Company, Monadnock Bldg., San Francisco
- R. W. Littlefield, 357-12th St., Oakland.
- K. E. Parker Co., Inc., Clunie Bldg., San Francisco.
- Dinwiddie Construction Co., Crocker Bldg., San Francisco.
- John M. Bartlett, 357 Twelfth St., Oakland.
- Chas. Stockholm & Son, Monadnock Bldg., San Francisco.
- Clinton Construction Company, 923 Folsom St., San Francisco.
- Monson Bros., 251 Kearny St., San Francisco.
- Geo. Wagner, 251 Kearny St., San Francisco.
- T. B. Goodwin, 180 Jessie St., San Francisco..

SATINETTE WHITE ENAMEL

FLATTINE CABINET FINISH
ELASTICA INTERIOR AND ELASTICA EXTERIOR

Standard Varnish Works

55 STEVENSON STREET SAN FRANCISCO

Thor
Electric Washers and Ironers for the Home
Architects—Phone or write for plans and specifications for model Home Laundry
THOR ELECTRIC SHOP
124 Post St., San Francisco Phone Sutter 3354

ARCHITECTS' SPECIFICATION INDEX—Continued

McLeran & Co., R., Hearst Bldg., San Francisco.
Robert Trost, 26th and Howard Sts., San Francisco.
I. M. Sommer, 401 Balboa Bldg., San Francisco.
Jas. L. McLaughlin, 251 Kearny St., San Francisco.
Alfred H. Vogt, 185 Stevenson St., San Francisco.
Lange and Bergstrom, Sharon Bldg., San Francisco and Washington Bldg., Los Angeles.
David Nordstrom, 4146 Emerald Street, Oakland.
Carl T. Peterson, 185 Stevenson St., San Francisco.

CONTRACTORS' EQUIPMENT
Edward R. Bacon Co., 51 Minna St., San Francisco, and Los Angeles.

CONVENIENCE OUTLETS
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St.

CORK TILE
Van Fleet-Frecar Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

CRUSHED ROCK
Coast Rock & Gravel Co., Call-Post Bldg., San Francisco.

CURTAINS—STEEL, ROLLING, FIREPROOF
J. G. Wilson Corp., 621 N. Broadway, Los Angeles.

DAMP-PROOFING AND WATERPROOFING
Armorite Damp Resisting Paint, made by W. P. Fuller & Co., San Francisco.
"Imperial," manufactured by Brooks & Doerr, Merchants National Bank Building, San Francisco.
Samuel Cabot Co., Boston; represented in San Francisco by Pacific Materials Co., Underwood Bldg., San Francisco.
"Pabco" Damp-Proofing Compound, sold by the Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.
The General Fireproofing Company, 20 Beale Street, San Francisco

DOOR HANGERS
McCabe Door Hanger Company, leading hardware stores.
Pitcher Hanger, sold by National Mill & Lumber Co., 326 Market St., San Francisco.
Stanley Works, New Britain, Conn., Monadnock Bldg., San Francisco.

DOORS—VANISHING
W. L. Evans, 700 Block B., Washington, Ind.

DRAIN PIPE AND FITTINGS
"Corrosiron" Acid Proof, manufactured by Pacific Foundry Co., Harrison and 18th Sts., San Francisco.

DRINKING FOUNTAINS
Haws Sanitary Drinking Faucet Co., 1808 Harmon St., Berkeley, and C. F. Weber & Co., San Francisco and Los Angeles.
Crane Company, San Francisco, Oakland, and Los Angeles.
Pacific Porcelain Ware Co., 67 New Montgomery St., San Francisco.
Haines, Jones & Cadbury Co., 857 Folsom St., San Francisco.

DUMB WAITERS
Spencer Elevator Company, 166-7th St., San Francisco.
San Francisco Elevator Company, Inc., 860 Folsom St., San Francisco.
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.

ELECTRICAL APPLIANCE SUPPLIES
Electric Appliance Company, 809 Mission St., San Francisco.

ELECTRICAL CONTRACTORS
Butte Electrical Equipment Company, 530 Folsom St., San Francisco.
Butte Electric & Manufacturing Co., 534 Folsom St., San Francisco.
Central Electric Company, 177-79 Minna St., San Francisco
NePage, McKenny Co., 589 Howard St., San Francisco.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.
H. S. Tittle, 766 Folsom St., San Francisco.
Brown-Langlais Electrical Construction Co., 313 Fifth Street, San Francisco.
A. F. Wells Company, 155 Second St., San Francisco.
M. E. Ryan, Redwood City, and 251 Tehama St., San Francisco.
Newberry Electric Company, Alta Bldg., San Francisco

ELECTRIC PLATE WARMER
The Prometheus Electric Plate Warmer for residences, clubs, hotels, etc. Sold by M. E. Hammond, Pacific Bldg., San Francisco.

ELECTRICAL SUPPLIES AND EQUIPMENT
"H. & H. Switches," Garnett Young & Co., 612 Howard St., San Francisco.
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St.
Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco.

ELECTRIC TOWEL
The AIRDRY Electric Towel for clubs, office buildings, hotels, schools, etc., represented on Pacific Coast by Airdry Electric Service Co., Rialto Building, San Francisco.

ELEVATORS—PASSENGER and FREIGHT
Pacific Elevator & Equipment Co., 1129 Howard Street, San Francisco.
Otis Elevator Company, Stockton and North Point, San Francisco.
Spencer Elevator Company, 166-7th St., San Francisco.
San Francisco Elevator Co., 860 Folsom St., San Francisco.
Union Construction Company, Balfour Bldg., San Francisco.
Van Emon Elevator Company, 1159 Howard St., San Francisco.

ELEVATOR MOTORS AND CONTROL
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., and First National Bank Bldg., San Francisco, Calif.

Telephone Garfield 204
Independent Automatic Sprinkler Company
Fire Protection Engineers
Approved Devices 72 Natoma Street, San Francisco

TOLEDO AUTOMATIC SPRINGLESS SCALES
12 OUNCES TO 20 TONS
for Factories, Warehouses, Wholesale Houses—in fact any kind of business where accurate weight is desired
676 MISSION ST. Phone Sutter 250 **TOLEDO SCALE CO.** SAN FRANCISCO California

ARCHITECTS' SPECIFICATION INDEX—Continued

ELEVATOR SIGNALS, DOOR EQUIPMENT, ETC.
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.
Randall Control & Hydrometric Corporation, 265A Minna St., San Francisco, and 523 Central Bldg., Los Angeles.

ENGINEERS—ELECTRICAL
Robert L. St. John, 1011 Flat Iron Bldg., San Francisco.

ENGINEERS — CONSULTING, ELECTRICAL, MECHANICAL
Hunter & Hudson, Rialto Bldg., San Francisco.
Ralph E. Dodge, 251 Kearny St., San Francisco.
Robert L. St. John, 1011 Flat Iron Bldg., San Francisco
Charles T. Phillips Company, Bank of Italy Bldg., San Francisco, and Roberts Bldg., Los Angeles.

FAIENCE TILE
Tropico Potteries, Inc., Glendale, Cal.

FELTS
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FENCES—WIRE AND IRON
Standard Fence Company, 432 Bryant, San Francisco and 60th and Lowell Sts., Oakland.

FIRE BRICK, TILE & CLAY
Livermore Fire Brick Works, 604 Mission St., San Francisco.

FIRE EXIT LATCHES
Vonnegut Hardware Co., Indianapolis, Ind., represented in San Francisco by Abeel Jensen Co., Call Building.

FIRE ESCAPES
Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
Western Iron Works, 141 Beale St., San Francisco.

FIRE HOSE RACKS
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

FIRE-PROOF DOORS
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
U. S. Metal Products Co., 330-10th St., San Francisco.
Kinnear Mfg. Co., represented in San Francisco by Pacific Materials Co., Underwood Bldg.
The J. G. Wilson Corporation, 621 North Broadway, Los Angeles.

FIRE SPRINKLERS—AUTOMATIC
Fire Protection Engineering Co., 67 Main St., San Francisco.
Grinnell Company of the Pacific, 453 Mission St., San Francisco.
Independent Automatic Sprinkler Co., 72 Natoma St., San Francisco.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.

FIRE RETARDING PAINT
The Paraffine Companies, Inc., 34 First St., San Francisco.
Fire Retardent Products Co., 2838 Hannah St., Oakland. Cal.

FIXTURES—BANK, OFFICE, STORE, ETC.
Home Manufacturing Company, 543 Brannan St., San Francisco.
Mullen Manufacturing Co., 64 Rausch St., San Francisco.
C. F. Weber & Co., 985 Market St., San Francisco, and 210 N. Main St., Los Angeles, Cal.

FLOORS, BLOCK
Carter, Bloxonend Flooring Co., Kansas, Mo., represented on Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

FLOOR CLIPS
Bull Dog Floor Clip Sales Co., 77 O'Farrell St., San Francisco, and 600 Metropolitan Bldg., Los Angeles.

FLOORING, HEAVY DUTY
Carter, Bloxonend Flooring Co., Kansas, Mo., represented on Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

FLOORS—TILE, CORK, ETC.
Mangrum & Otter, 827 Mission St., San Francisco.

FLOOR VARNISH
Bass-Hueter and San Francisco Pioneer Varnish Works, 816 Mission St., San Francisco.
Fifteen for Floors, made by W. P. Fuller & Co., San Francisco.
Standard Varnish Works, Chicago, New York and San Francisco.
R. N. Nason & Co., San Francisco and Los Angeles.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Murphy's Transparent Floor, Uhl Bros., San Francisco, Seattle, Portland, Oakland, Los Angeles.

FLOORS—HARDWOOD
Oak Flooring Manufacturers' Association of the United States, Ashland Block, Chicago, Ill.
Cadwallader, Gibson Co., 5th & Brannan St., San Francisco.
Parrott & Co., 320 California St., San Francisco.
Strable Hardwood Company, 511 First St., Oakland.
E. L. Bruce Co., Manufacturers, Memphis, Tenn.
White Bros., 5th and Brannan Sts., San Francisco.

FLOOR TREATMENT—HARDWOOD, COMPOSITION AND CONCRETE
Minwax Co., Inc., 22 Battery St., San Francisco and 653 S. Clarence St., Los Angeles.

FLOORS—MASTIC—FLOOR COVERING
Hill, Hubbell & Company, 115 Davis St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FLUE LINING
California Brick Company, 604 Mission St., San Francisco.

FLUSH VALVES
Handy Self-Cleaning Flush Valve Co., 731 Folsom St., San Francisco.

FUEL OIL SYSTEMS
S. T. Johnson Co., 1337 Mission St., San Francisco.
S. F. Bowser & Co. Inc., 612 Howard St., San Francisco.
Wayne Tank and Oil Co., 430 Fourth St., San Francisco.

THE PELTON WATER WHEEL CO.
Hydraulic Engineers
Light-Duty High-Head Pumps for Tank and Other Building Service
Heavy-Duty Pumps for Municipal and General Water Supply
2022 Harrison Street San Francisco

NASON'S OPAQUE FLAT FINISH A VALUABLE OIL PAINT FOR WALLS, CEILINGS, ETC.
Made in California to stand Pacific Coast climatic conditions
R. N. Nason & Co., Paint Makers
PORTLAND 151 Potrero Ave.—SAN FRANCISCO—436 Market St. SEATTLE

ARCHITECTS' SPECIFICATION INDEX—Continued

FURNACES—WARM AIR
Mangrum & Otter, 827 Mission St., San Francisco.
Montague Range and Furnace Co., 826 Mission St., San Francisco.
C. B. Babcock Company, 768 Mission St., San Francisco.

FURNITURE—OFFICE, SCHOOL, CHURCH.
Home Manufacturing Company, 543 Brannan St., San Francisco.
C. F. Weber & Co., 985 Market St., San Francisco.
F. W. Wentworth & Co., 39 Second St., San Francisco.
W. & J. Sloane, 216 Sutter St., San Francisco.
Western States Seating Co., 133 Kearny St., San Francisco.

FURRING TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

GARAGE HARDWARE
The Stanley Works, New Britain, Conn., Coast sale offices, San Francisco, Los Angeles and Seattle, Wash.

GLASS
American Window Glass Co., represented by L. H. Butcher Co., 862 Mission St., San Francisco.
Cobbledick-Kibbe Glass Co., 666 Howard St., San Francisco.
Fuller & Goepp, 32 Page St., San Francisco, and Jackson, at Eleventh St., Oakland.
W. P. Fuller & Company, all principal Coast cities.

GRADING, WRECKING, ETC.
Dolan Wrecking & Construction Co., 1607 Market St., San Francisco.

GRANITE
Raymond Granite Co., Potrero Ave., and Division St., San Francisco.

GRAVEL AND SAND
Coast Rock & Gravel Co., Call-Post Bldg., San Francisco.
Del Monte White Sand, sold by Del Monte Properties Co., Crocker Bldg., San Francisco.

GYMNASIUM EQUIPMENT—LOCKERS, ETC.
Ellery Arms Co., 583 Market St., San Francisco.
George Trask, Durand Steel Locker Co., 76 Sacramento St., San Francisco.

HARDWARE
Joost Bros., agents for Russell & Erwin Hardware, 1053 Market St., San Francisco.
The Stanley Works, New Britain, Conn.; Coast sales offices, San Francisco, Los Angeles, and Seattle, Wash.
Corbin hardware, sold by Palace Hardware Co., 581 Market St., San Francisco.
Vonnegut hardware, sold by Abeel-Jensen Co. Call Bldg., San Francisco.

HARDWOODS
White Brothers, 5th and Brannan Streets, San Francisco.

HEATING AND VENTILATING CONTRACTORS
Atlas Heating and Ventilating Company, Inc., Fourth and Freelon Sts., San Francisco.
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St,, San Francisco.
Hateley & Hateley, Mitau Bldg., Sacramento.
Mangrum & Otter, 827-831 Mission St., San Francisco.
Lawson & Drucker, 450 Hayes St., San Francisco.
Carl T. Doell, 467 21st St., Oakland.
Luppen, Hawley & Thing, 906 7th St., Sacramento.
William F. Wilson Co., 328 Mason St., San Francisco.
W. H. Picard, 5656 College Ave., Oakland.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.
Scott Company, 243 Minna St., San Francisco.
H. G. Newman Co., 2004 Telegraph Ave., Oakland.

HEATING & VENTILATING EQUIPMENT
W. S. Haines & Co.'s steam specialties. O. M. Simmons Company, 115 Mission St., San Francisco.
Hulting, Hurst & Hulting, representing Jas. P. Marsh Co., Monadnock Bldg., San Francisco.
Illinois Engineering Co., Pacific Bldg., San Francisco.
Williams Radiator Company, 571 Mission St., San Francisco.

HEATERS, WATER-GAS, ELECTRIC, ETC.
Pittsburg Water Heater Company, 478 Sutter St., San Francisco.
Ruud Automatic Water Heater, sold by Ruud Heater Company, 431 Sutter St., San Francisco.
C. B. Babcock Company, representing General Gas Light Company, 768 Mission St., San Francisco.

HEATERS, GAS GRATES, RADIATORS, ETC.
General Gas Light Company, 768 Mission St., San Francisco.
Ra-Do Fumeless Gas Radiators, Potter Radiator Corporation, 478 Sutter St., San Francisco
Humphrey Radiantfire, sold by Rudd Heater Company, 431 Sutter St., San Francisco.
Williams Radiator Company, "Gas Steam Radiators," 571 Mission St., San Francisco.

HOLLOW BUILDING TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

HOLLOW TILE BLOCKS
Cannon & Co., plant at Sacramento; 77 O'Farrell St., San Francisco.
California Brick Company, 604 Mission St., San Francisco.
Gladding, McBean & Co., San Francisco, Los Angeles, Oakland and Sacramento.

The Perfect Automatic Valve
W. S. Haines & Co., Steam Specialties, Vacuum and Vapor Systems of Heating
"Twenty-four years of satisfactory service."
(See Page 1503 of Sweet's Catalogue)
O. M. SIMMONS CO. 115 Mission St., San Francisco Phone: Douglas 5497

Clarence E. Musto, Pres. Joseph B. Keenan, Vice-Pres. Guido J. Musto, Sec'y & Treas.

JOSEPH MUSTO SONS--KEENAN CO.

Phone Franklin —6365— MARBLE Office and Mills: 535-565 North Point St., SAN FRANCISCO, CAL.

ARCHITECTS' SPECIFICATION INDEX—Continued

HOSE—UNDERWRITERS UNLINED LINEN—RUBBER
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

HOSPITAL FIXTURES
Mott Company of California, 553 Mission St., San Francisco.

HOSPITAL SIGNAL SYSTEMS
Chicago Signal Co., represented by Garnett Young & Co., 612 Howard St., San Francisco.
Holtzer-Cabot Electric Company, San Francisco Branch, 408 Claus Spreckles Building.

ICE MAKING MACHINERY
Cyclops Iron Works, 837 Folsom St., San Francisco.

INCINERATORS
The Incinerite, sold by M. E. Hammond, Mezzanine, Pacific Building, San Francisco.

INDUSTRIAL LIGHTING EQUIPMENT
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

INGOT IRON
"Armco" brand, manufactured by American Rolling Mill Company, Middletown, Ohio, and 10th and Bryant Sts., San Francisco.

INSPECTIONS AND TESTS
Robert W. Hunt & Co., 251 Kearny St., San Francisco.

INSULATION
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

JAIL EQUIPMENT
Ralston Iron Works, 20th and Indiana Sts., San Francisco.

LAMP POSTS, ELECTROLIERS, ETC.
J. L. Mott Iron Works, 553 Mission St., San Francisco.

LANDSCAPE ARCHITECT
Emerson Knight, 704 Market St., San Francisco.

LANDSCAPE GARDENERS
MacRorie-McLaren Co., 514-516 Phelan Bldg., San Francisco.

LATHING AND PLASTERING
MacGruer & Simpson, 226 Tehama St., San Francisco.
A. Knowles, Call-Post Bldg., San Franciaco.

LATHING MATERIAL—WIRE,ETC.
Buttonlath Manufacturing Co., Los Angeles and 207 Balboa Bldg., San Francisco.
Pacific Materials Co., 525 Market St., San Francisco.
The General Fireproofing Company, 20 Beale Street, San Francisco
Truscon Steel Co., 709 Mission Street, San Francisco.
Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.

LEATHER MATS
Leather Mat Mfg. Co., 340 Sansome St., San Francisco.

LIGHT, HEAT AND POWER
Great Western Power Company, Stockton St., near Sutter, San Francisco.
Pacific Gas & Electric Co., Sutter St., San Francisco.

LIGHTING FIXTURES
Benjamin Electric Mfg. Co., New York, Chicago and San Francisco.
D. Dierssen Co., 20 Second Street, San Francisco. Distributors Solar-Lite fixtures.
Electric Appliance Company, 809 Mission St., San Francisco.
Roberts Mfg. Co., 663 Mission St., San Francisco.

LIMESTONE, INDIANA
Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana.

LINOLEUM
D. N. & E. Walter & Co., 562 Mission St., San Francisco.
The Paraffine Companies, factory in Oakland; office, 34 First St., near Market, San Francisco.
W. & J. Sloane, 216 Sutter St., San Francisco.
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

LINOTILE
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

LUMBER
Hart-Wood Lumber Co., Fifth and Berry Sts., San Francisco.
Pacific Manufacturing Company, San Francisco, Oakland, Los Angeles and Santa Clara.
Pope & Talbot, foot of Third St., San Francisco.
Santa Fe Lumber Co., 16 California St., San Francisco.
Sunset Lumber Company, First and Oak Sts., Oakland.
White Bros., 5th and Brannan Sts., San Francisco.

MAIL CHUTES
American Mailing Device Corp., represented on Pacific Coast by Waterhouse-Wilcox Co., 523 Market St., San Francisco.

MANTELS—WOOD, TILE, ETC.
Mangrum & Otter, 827-831 Mission St., San Francisco.

MARBLE
American Marble and Mosaic Co., 25 Columbus Square, San Francisco.
Ray Cook Marble Company, foot of Powell St., Oakland.
Joseph Musto Sons, Keenan Co., 535 N. Point St., San Francisco.
Vermont Marble Co., Coast branches, San Francisco, Portland and Tacoma.
Tompkins-Kiel Marble Company, 505 Fifth Ave., New York; also Chicago, Philadelphia and San Francisco.

RAY COOK MARBLE CO.
IMPORTED AND DOMESTIC MARBLES
For Building Construction
Factory and Office, foot of Powell St., Oakland Phone Piedmont 1009

ELECTRIC APPLIANCE COMPANY
ELECTRICAL SUPPLIES
AUTOMOTIVE SUNDRIES RADIO EQUIPMENT
809 MISSION STREET, SAN FRANCISCO
Phone Sutter 4900

ARCHITECTS' SPECIFICATION INDEX—Continued

Columbia Marble Co., 413 Rialto Bldg., San Francisco.

MATS, LEATHER
Leather Mat Manufacturing Co., 340 Sansome St., San Francisco.

METAL DOORS AND WINDOWS
Waterhouse-Wilcox Co., Inc., 523 Market St., San Francisco.
U. S. Metal Products Co., 330 Tenth St., San Francisco.

METAL FURNITURE
Forderer Cornice Works, 269 Potrero Ave., San Francisco.

METAL STORE FRONTS
Cobbledick-Kibbe Glass Company, 666-8 Howard street, San Francisco, and Washington at Third St., Oakland.

METAL TOILET—PARTITIONS
John R. Steffens-Lomax Co., 951 Monadnock Bldg., San Francisco.

MILL WORK
Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.
National Mill and Lumber Co., San Francisco and Oakland.
Lannom Bros. Mfg. Co., 5th and Magnolia Sts., Oakland.

OIL BURNERS
Bunting Iron Works, 1215 First Nat. Bank Bldg., San Francisco.
Coen Co., Inc., 112 Market St., San Francisco
Fess System Co., 220 Natoma St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
G. E. Witt Co., 862 Howard St., San Francisco.
W. S. Ray Mfg. Company, Rialto Bldg., San Francisco, and 2206 San Pablo Ave., Oakland.
Rotary Oil Burner Company, 159 Twelfth St., Oakland.

OIL STORAGE AND DISTRIBUTING STATIONS
S. F. Bowser & Co., Inc., 612 Howard St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
Wayne Oil Tank & Pump Co., 430 Fourth St., San Francisco; 830 S. Los Angeles St., Los Angeles.

ORNAMENTAL IRON AND BRONZE
California Artistic Metal and Wire Co., 349 Seventh St., San Francisco.
Federal Ornamental Iron and Bronze Co., 16th St., and San Bruno Ave., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
C. J. Hillard Company, Inc., 19th and Minnesota Sts., San Francisco.
Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.

PANIC DOORS
Vonnegut hardware, sold by Abeel-Jensen Co. Call Bldg., San Francisco.

PAINT FOR CEMENT AND STUCCO
Wadsworth, Howland & Co., Inc., Jas. Hambly & Son, 1333 E. 7th St., Los Angeles, and 229 Clay St., San Francisco.

PAINT FOR STEEL STRUCTURES, BRIDGES, ETC.
The Paraffine Companies, Inc., 34 First St., San Francisco.
Premier Graphite Paint and Pioneer Brand Red Lead, made by W. P. Fuller & Co., San Francisco.
Hill, Hubbell & Company, 115 Davis St., San Francisco.
U. S. Elaterite Products Co. of the Pacific, American National Bank Building, San Francisco.

PAINTING, TINTING, ETC.
I. R. Kissel, 1747 Sacramento St., San Francisco.
D. Zelinsky & Sons, San Francisco and Los Angeles.
The Tormey Co., 681 Geary St., San Francisco.
A. Quandt & Son, 374 Guerrero St., San Francisco.
Artistic Painting Company, 39 Tehama St., San Francisco.

PAINTS, OILS, ETC.
Magner Bros., 414-424 Ninth St., San Francisco.
Bass-Huetcr Paint Co., Miasion, near Fourth St., San Francisco and all principal Coast cities.
R. N. Nason & Company, San Francisco, Los Angeles, Portland and Seattle.
W. P. Fuller & Co., all principal Coast cities.
Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Fire Retardent Products Co., 2838 Hannah St., Oakland, Cal.
Uhl Bros., San Francisco, Los Angeles, Oakland, Portland, and Seattle.

PARTITIONS—FOLDING AND ROLLING
J. G. Wilson Corporation, 621 N. Broadway, Los Angeles; Waterhouse-Wilcox Co., Underwood Bldg., San Farncisco.

PARTITION TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

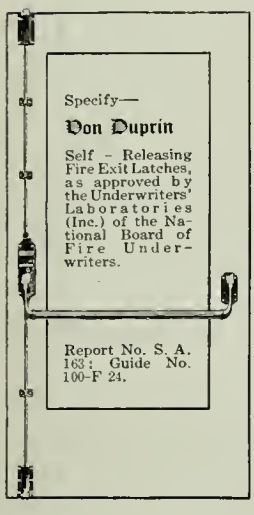
PILE DRIVING AND DREDGING
Western Construction Company, 24 California St., San Francisco.

PLASTERING CONTRACTORS
A. Knowles, Call Bldg., San Francisco.
MacGruer & Simpson, 266 Tehama St., San Francisco.

SILENT CALL **Chicago HOSPITAL** SIGNAL SYSTEMS
GARNETT YOUNG AND COMPANY
Pacific Coast Sales Engineers
612 Howard St., San Francisco
Seattle Los Angeles Portland

Von Duprin

Self-Releasing Fire Exit Latches


Specify—
Von Duprin
Self - Releasing Fire Exit Latches, as approved by the Underwriters' Laboratories (Inc.) of the National Board of Fire Underwriters.
Report No. S. A. 163; Guide No. 100-F 24.

Building Good Will

A few years ago the general public did not know the purpose of the **Von Duprin** latches on exit doors.

They found out that pushing or pulling the cross bar released the latch bolts—and in time of emergency the natural instinct to rush at the exit doors caused the **Von Duprins** to operate, making safe exit certain.

This condition has changed. The average man or woman now knows what **Von Duprin** latches are for, and knows that the architect and building owner who installed them are interested in the safety of the occupants.

Today people have greater confidence in the building which is **Von Duprin** equipped. The building owner is reaping the benefits of his forethought in increased goodwill.

Ask for Catalog 12-L, or see "Sweet's," pages 1323- 1327.

VONNEGUT HARDWARE CO.
Indianapolis, Ind.

Blackstone Theatre, South Bend, Indiana
Henry L. Newhouse, Architect, Chicago

BLACKBOARDS
First Grade Natural Slate **Green or Black Composition Board**
Estimates Given for Complete Installations School Furniture and Supplies
STEWART SALES CO.
247 Rialto Building San Francisco, Cal.

ARCHITECTS' SPECIFICATION INDEX—Continued

PLUMBING CONTRACTORS
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St., San Francisco.
Doell, Carl T., 467 21st St., Oakland.
Hateley & Hateley, Mitau Bldg., Sacramento.
Scott Co., Inc., 243 Minna St., San Francisco.
Wm. F. Wilson Co., 328 Mason St., San Francisco.
Luppen, Hawley & Thing, 906 7th St., Sacramento.
W. H. Picard, 5656 College Ave., Oakland.
H. G. Newman Company, 2004 Telegraph Ave., Oakland.

PLUMBING SUPPLY HOUSES
Crane Company, all principal coast cities.
Haines, Jones & Cadbury Co., 857 Folsom St., San Francisco.
H. Mueller Manufacturing Company, 635 Mission St., San Francisco.
Holbrook, Merrill & Stetson, 64 Sutter St., San Francisco.
J. L. Mott Iron Works, D. H. Gulick, selling agent, 553 Mission St., San Francisco.
Pacific Sanitary Manufacturing Co., 67 New Montgomery St., San Francisco.
West Coast Porcelain Manufacturers, Oceanic Bldg., San Francisco.

POLES AND PILING
Santa Fe Lumber Co., 16 California St., San Francisco.

PUMPS—HAND OR POWER
Chicago Pump Co., represented by Garnett, Young & Co., 612 Howard St., San Francisco.
Simonds Machinery Co., 117 New Montgomery St., San Francisco.
Ocean Shore Iron Works, 558 Eighth St., San Francisco.
Pelton Water Wheel Co., 2022 Harrison St., San Francisco.
S. F. Bowser & Co., Inc., 612 Howard St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
Wayne Tank & Pump Co., 430 Fourth St., San Francisco; 830 S. Los Angeles St., Los Angeles.
Byron Jackson Iron Works, 55 New Montgomery St., San Francisco.

RADIO EQUIPMENT
Electric Appliance Company, 809 Mission St., San Francisco.

REINFORCING STEEL
Edward L. Soule, Rialto Bldg., San Francisco.
Badt-Falk & Co., Call Bldg., San Francisco.
Judson Iron Works, San Francisco and Oakland.
Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
Pacific Coast Steel Co., Rialto Bldg., San Francisco.
Truscon Steel Co., 709 Mission St., San Francisco.

REFLECTORS
I. P. Frink, Inc., 77 O'Farrell St., San Francisco.

REFRIGERATORS
McCray Refrigerator Company San Francisco office, 765 Mission St.

ROOFING AND ROOFING MATERIALS
"Malthoid" and 'Ruberoid," also 'Pabco" ten and twenty year roofs, manufactured by the Paraffine Companies, Inc., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.
H. H. Robertson Co., Hobart Bldg., San Francisco.
Jones Brothers Asbestos Supply Co., 512 Second St., San Francisco.
Johns-Manville Inc., of California, 500 Post St., San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.

RUBBER TILING—INTERLOCKING
New York Belting & Packing Co., 518-19 Mission St., San Francisco.

RUGS & CARPETS
W. & J. Sloane, 216 Sutter St., San Francisco.

SAFETY TREADS
Pacific Materials Co., 525 Market St., San Francisco.

SAND
Coast Rock & Gravel Co., Call Bldg., San Francisco.
Del Monte White Sand, Del Monte Properties Co., 401 Crocker Bldg., San Francisco.

SASH AND CABLE CHAINS
Smith & Egge Mfg. Co., Bridgeport, Conn. Coast agents, Rawlins & Smith, San Francisco and Los Angeles.

SAFES AND VAULTS
Hermann Safe Company, 216 Fremont St., San Francisco.

SCALES
Toledo Scale Company, 676 Mission St., San Francisco.

SCENIC PAINTING—DROP CURTAINS, ETC.
The Edwin H. Flagg Scenic Co., 1638 Long Beach Ave., Los Angeles, and 17th and Mission Sts., San Francisco.

SHEATHING AND SOUND DEADENING
Samuel Cabot Mfg. Co., Boston, Mass., agencies in San Francisco, Oakland, Los Angeles, Portland, Tacoma and Spokane.
The Paraffine Companies, Inc., 34 First St., San Francisco.

SHEET METAL WORK
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
U. S. Metal Products Co., 330-10th St., San Francisco.

SHINGLE STAINS
Bass-Hueter Paint Company, all principal Coast cities.

ELECTRICAL LAYOUTS AND PLANS
FOR BUILDINGS, INDUSTRIAL PLANTS, ETC.
ROBERT L. ST. JOHN
Phone Douglas 5902 1011 FLAT IRON BUILDING San Francisco, Calif.

BULL DOG FLOOR CLIPS

The use of this clip to anchor wood floors to concrete is cheap insurance against floor buckle and dry rot. Write for samples and special information.

BULL DOG FLOOR CLIP SALES CO.

77 O'Farrell St., San Francisco 600 Metropolitan Bldg., Los Angeles

L. T. KELLEY, General Manager

ARCHITECTS' SPECIFICATION INDEX—Continued

Cabot's Creosote Stains, sold by Pacific Bldg. Materials Co., 525 Market St., San Francisco.
Fuller's Pioneer Shingle Stains, made by W. P. Fuller & Co., San Francisco.
The Paraffine Companies, San Francisco, and principal Coast Cities.

SHUTTERS—ROLLING, FIRE, STEEL, WOOD
J. G. Wilson Corp, 621 North Broadway, Los Angeles.

SIGNALING & PROTECTIVE SYSTEMS
Holtzer-Cabot Electric Co., 125 Armory St., Boston; 408 Claus Spreckels Building, San Francisco.
Garnett, Young & Co., 612 Howard St., San Francisco.

SINKS—COMPOSITION
Petrium Sanitary Sink Co., Fifth and Page Sts., Berkeley.

SKYLIGHTS
H. H. Robertson Co., represented on the Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

STEEL HEATING BOILERS
Birchfield Boiler Company, Tacoma, Washington.
Kewanee Boiler, factory branch, Exposition Building, San Francisco.

STEEL TANKS, PIPE, ETC.
Ocean Shore Iron Works, 55 Eighth St., San Francisco.

STEEL TANKS
Main Iron Works, 1000 Sixteenth Street, San Francisco
S. T. Johnson Co., 1337 Mission St., San Francisco.

STEEL & IRON
Main Iron Works, 1000 Sixteenth Street, San Francisco.

STEEL AND IRON—STRUCTURAL
Central Iron Works, 621 Florida St., San Francisco.
Herrick Iron Works, 18th and Campbell Sts., Oakland.
Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
Judson Mfg. Co., 817-821 Folsom St., San Francisco.
Mortenson Construction Co., 19th and Indiana Sts., San Francisco.
Pacific Rolling Mills, 17th and Mississippi Sts., San Francisco.
Palm Iron & Bridge Works, Sacramento.
Ralston Iron Works, 20th and Indiana streets. San Francisco.
Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.
Western Iron Works, 141 Beale St., San Francisco.

STEEL LUMBER
The General Fireproofing Company, 20 Beale Street, San Francisco

STEEL ROLLING DOORS
Kinnear Rolling Steel Doors, sold by Pacific Building Materials Co., Underwood Bldg., San Francisco.
Wilson Rolling Steel Doors, the J. G. Wilson Corporation, 621 North Broadway, Los Angeles and Waterhouse Wilcox Co., 523 Market St., San Francisco.

STEEL SASH
Bayley-Springfield solid steel sash, sold by Pacific Materials Co., 525 Market St., San Francisco.
"Fenestra" Solid Steel Sash, manufactured by Detroit Steel Products Co., factory sales office, 251 Kearny St., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
U. S. Metal Products Company, 330 Tenth St., San Francisco.
Truscon Steel Company, 709 Mission St., San Francisco.
Allison Steel Sash—John R. Steffens-Lomax Company, 951-53 Monadnock Bldg., San Francisco.

STEEL TANKS
Main Iron Works, 1000 Sixteenth Street, San Francisco.

STEP AND WALK BRICK
California Brick Company, 604 Mission St., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.

STONE
Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana.

STREET LIGHTING EQUIPMENT
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

STUCCO AND STUCCO BASE
John R. Steffens-Lomax Co., 951 Monadnock Bldg., San Francisco.

STUCCO, COMPOSITION
California Stucco Co., Hobrook Building, San Francisco.
Hoff Magnesite Co., San Francisco. Miller & Alf, 337 Monadnock Bldg., San Francisco, general agents.

STUDDING—FIREPROOF STEEL
The General Fireproofing Company, 20 Beale Street, San Francisco

SWITCHES AND SWITCHBOARDS
Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

TELEPHONES—AUTOMATIC
P-A-X System, represented by Direct Line Telephone Company, 37 California Street, San Francisco.

TELEPHONE SYSTEMS
Direct Line Telephone Co., 37 California Street, San Francisco.
"Connecticut" Intercommunicating Telephones, Myers & Schwartz, 71 New Montgomery St., San Francisco.
"Stromberg-Carlson Telephones," Garnett Young & Company, 612 Howard St., San Francisco.

THEATER AND OPERA CHAIRS
C. F. Weber & Co., 365 Market street, San Francisco.
Western States Seating Co., 133 Kearny St., San Francisco.

THERMOSTATS FOR HEAT REGULATION
Johnson Service, Rialto Bldg., San Francisco.

TILES FOR FLOORS, MANTELS, ROOFS
Cannon & Co., Sacramento; and 77 O'Farrell St. San Francisco.

W. & J. SLOANE

216-228 SUTTER STREET
SAN FRANCISCO
Phone: GARFIELD 2838

LINOLEUMS
WINDOW SHADES
CARPETS
FURNITURE

M. E. RYAN
ELECTRICAL CONTRACTOR
SAN FRANCISCO — 251 TEHAMA ST. — Phone Garfield 3159
REDWOOD CITY — 205 MAIN ST. — Phone Redwood 250 J

ARCHITECTS' SPECIFICATION INDEX—Continued

Gladding, McBean & Co., Crocker Bldg., San Francisco.
Livermore Fire Brick Works and California Brick Company, 604 Mission St., San Francisco.
S. & S. Tile Co., 4th and Carrie Streets, San Jose.

TRANSMISSION MACHINERY
Meese & Gottfried Co., San Francisco, Los Angeles, Portland and Seattle.

TRAVELING CRANES
Cyclops Iron Works, 837 Folsom St., San Francisco.

VALVES—PIPES AND FITTINGS
Crane Radiator Valves, manufactured by Crane Co., Second and Brannan Sts., San Francisco.
Grinnell Co., 453 Mission St., San Francisco.
O. M. Simmons Co., 115 Mission St., San Francisco.
H. Mueller Mfg. Co., 635 Mission street, San Francisco.
Kennedy Valve Mfg. Co., 23-25 Minna street, San Francisco.

VALVE PACKING
N. H. Cook Belting Co., 317 Howard St., San Francisco.

VARNISHES
Bass-Hueter Paint Company, Mission, near 4th street, San Francisco, and all principal Coast cities.
W. P. Fuller Co., all principal Coast cities.
R. N. Nason & Co., San Francisco, Los Angeles, Portland and Seattle.
Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Murphy's Varnish, Uhl Bros., San Francisco, Seattle, Portland, Oakland, Los Angeles.

VENEERS
White Brothers, 5th and Brannan Streets, San Francisco.

VENEERED PANELS
White Brothers, 5th and Brannan Streets, San Francisco.

VENTILATORS
H. H. Robertson Co., represented on the Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

VITREOUS CHINAWARE
Pacific Sanitary Manufacturing Company, 67 New Montgomery St., San Francisco.
West Coast Porcelain Manufacturers, 424 Oceanic Bldg., San Francisco.

WATERPROOFING (See Damproofing)
Medusa Waterproofing, manufactured by Sandusky Cement Co., Cleveland, Ohio. Carried in stock and sold by leading building supply dealers in California, Oregon and Washingt
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

WALL BEDS—SEATS, ETC. (See Beds)

WALL BOARD
"Amiwud" and "Pabco," manufactured by The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
"Campo-Board," White Brothers, distributors, 5th and Brannan Streets, San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.

WALL PAINT
Nason's Opaque Flat Finish, manufactured by R. N. Nason & Co., San Francisco, Portland and Los Angeles.

WALL PAPER AND DRAPERIES
The Tormey Co., 681 Geary St., San Francisco.
W. & J. Sloane, 216-228 Sutter St., San Francisco.
Uhl Bros., San Francisco.

WARDROBES, SCHOOL
W. L. Evans, 700 Block B., Washington, Indiana
James G. Wilson Corporation, 11 East 36th St., New York and Los Angeles.

WASHING MACHINES—ELECTRIC
Thor Electric Shop, 124 Post St., San Francisco.

WATER SUPPLY SYSTEMS
Kewanee Water Supply System—Simonds Machinery Co., agents, 117 New Montgomery St., San Francisco.

WATERPROOFING
U. S. Elaterite Products Co. of the Pacific, American National Bank Building, San Francisco.

WHEELBARROWS—STEEL
Western Iron Works, Beale and Main Sts., San Francisco.

WHITE ENAMEL
"Gold Seal," manufactured and sold by Bass-Hueter Paint Co. All principal Coast cities.
"Silkenwhite," made by W. P. Fuller & Co., San Francisco.
"Satinette," Standard Varnish Works, 55 Stevenaon St., San Francisco.
The Paraffine Companies, Inc., 34 First St., San Francisco, Los Angeles, Portland and Seattle.
Murphy's Muronic Enamel and Murphy's Enamel Undercoating, Uhl Bros., San Francisco, Seattle, Portland, Oakland, Los Angeles.

WINDOW SHADES
W. & J. Sloane, 216 Sutter street, San Francisco.
D. N. & E. Walter, 562 Mission street, San Francisco.

WINDOW SASH CHAIN
The Smith & Egge Mfg. Co., Bridgeport, Conn. Coast agents, Rawlins & Smith, 604 Mission St., San Francisco, and 618 American Bank Building, 2nd and Spring Sts., Los Angeles.

WINDOWS, REVERSIBLE, CASEMENT, ETC.
Hauser Window Co., 1362 Harrison St., San Francisco.
J. G. Wilson Corporation, 621 N. Broadway, Los Angeles; Waterhouse-Wilcox Co., Underwood Bldg., San Francisco.
Critall Casement Window Company, Detroit; Waterhouse-Wilcox Company, agents, 523 Market St., San Francisco.

WIRE, ELECTRICAL
Garnett Young & Company, 612 Howard St. San Francisco.
Electric Appliance Company, 809 Mission St., San Francisco.
"Lowell" Rubber Covered Wire sold by Myers & Schwartz, 90 New Montgomery St., San Francisco.

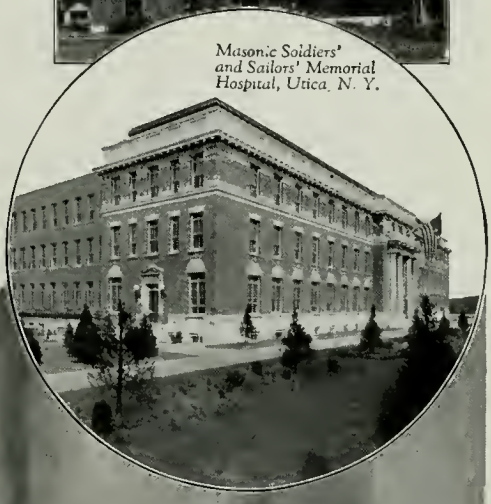
WIRE FENCE
Standard Fence Co., 245 Market street, San Francisco; and 310 12th street, Oakland.

GLOBE AUTOMATIC SPRINKLERS
Will protect your building and business from destruction by fire and reduce your Insurance Rate. Write for estimates.
Pacific Fire Extinguisher Company
FIRE PROTECTION ENGINEERS
424-440 Howard Street, San Francisco — Manufacturing Plant, 298 Fremont St.

OAK FLOORS are today giving satisfactory service in the Presbyterian Home for the Aged, Evanston, Ill., shown at left, in the Nurses' Home, Robinwood Hospital, Toledo, Ohio, shown next below, and in the Masonic Memorial Hospital, Utica, N.Y.

In Hospitals—

Modern Oak Floors are Sanitary, Permanent, Beautiful



Masonic Soldiers' and Sailors' Memorial Hospital, Utica, N. Y.

Cleanliness—

Oak floors are sanitary. The polished surface is easily cleaned, and the floor kept bright and fresh with least time and effort—a factor to be considered in cost of up-keep.

Durability—

Oak floors never deteriorate. Only the finish is subject to daily wear, and is quickly renewed, when necessary, by varnishing. Oak flooring stands the test of time, and is today giving full service in schools, factories and similar buildings, as well as hospitals, after hard and long continued use.

Beauty—

The patient's recovery is influenced by little things, such as comfort and "hominess" in surroundings. Oak floors suggest home and bring relief into the sick room. In nurses' quarters, also, and in homes for the aged, oak floors are appreciated for the friendly atmosphere they impart.

The advantages of oak floors are fully brought out in literature available for architects' reference files, which will be sent you on request.

OAK FLOORING BUREAU
1036 Ashland Block, Chicago

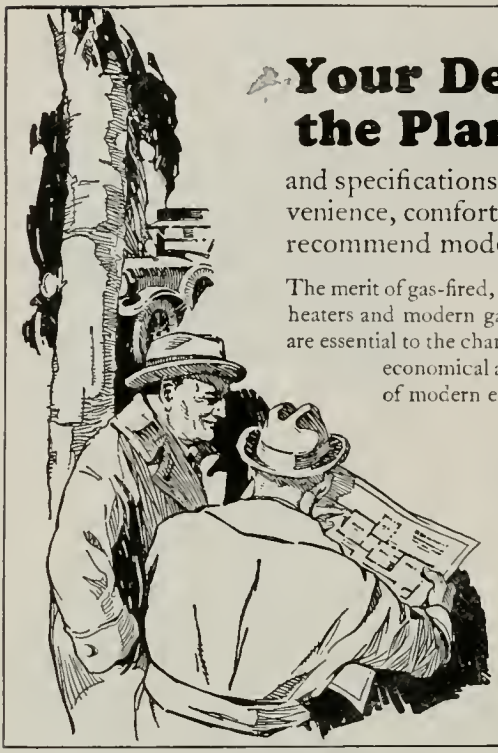
SEE OUR CATALOGUE IN SWEET'S

See page 481—17th edition

Put your flooring problems up to our experienced experts. We will gladly serve you

OAK FLOORS

FOR EVERLASTING ECONOMY



Your Development of the Plans—

and specifications contemplates every item of convenience, comfort and service,—and naturally you recommend modern units of equipment.

The merit of gas-fired, house heating systems, automatic gas water heaters and modern gas ranges is recognized. These appliances are essential to the character of a modern home and afford quick, economical and reliable service so necessarily expected of modern equipment.

Interesting data and facts have been collected by our gas sales engineers which they will be glad to submit to you. Let us tell you about the remote or automatic control used with gas-fired steam, hot water or warm air heating systems.

PACIFIC GAS AND ELECTRIC COMPANY
A California company serving over 318,000 gas consumers.

P·G·and E·
"PACIFIC SERVICE"

ARMSTRONG'S

LINOTILE
CORK TILE
LINOLEUM

Furnished and Installed by

VAN FLEET FREEAR COMPANY

420 South Spring St.
Los Angeles

557 Howard Street
San Francisco

Farmers and Merchants Bank, Long Beach, Cal.

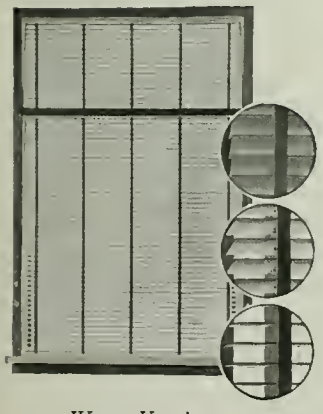
Architects:
Curlett & Beelman
Los Angeles, Cal.

Daylight without Glare

WESTERN VENETIAN BLINDS overcome the difficulties of daylight control. They provide an ideal light—daylight without glare.

Bright sunlight which glares through improperly shaded windows is eliminated. Daylight is reflected and diffused; softened and subdued. All available window area, especially the upper portion of windows which has the greatest lighting value, is used to best advantage. This is accomplished by the ingenious arrangement of adjustable slats of which this modern window equipment is made.

Further, Western Venetian Blinds, because of their handsome appearance, harmonize perfectly with the interior and exterior of any modern business structure.



Western Venetian Blinds can be Instantly and easily Adjusted to Regulate Light and Ventilation

Write for Special Bank and Office Building Catalogs

Pages 1081 to 1085 Inclusive 17th Edition

Western Blind & Screen Company

General Offices, Los Angeles; Factories, Los Angeles and Kansas City

New York, N. Y., 25 W. 43rd St. Chicago, Ill., 326 W. Madison St.
Atlanta, Ga., 309 Flatiron Bldg. Portland, Ore., 213 Fitzpatrick Bldg.
Kansas City, Mo., 14th & Montgall San Francisco, Cal., 921 Hearst Bldg.
Texas Agents: Two Republics Sales Service
523 Hicks Bldg., San Antonio Kirby Bldg., Dallas

Western Venetian Blinds

MORE LIGHT~MORE AIR~LESS GLARE

E. B. Noble, President
A. E. Wilkins, Vice-Pres.

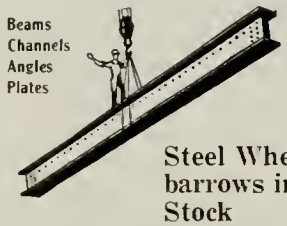
Beam, Angle, Channels, and Universal Mill Plates for immediate shipment from stock

Pacific Rolling Mill Co.

SUPPLIERS OF
FABRICATED STRUCTURAL STEEL, Forgings
Bolts, Rivets, Frogs, Switches, Cast Iron Castings

General Office and Works
17th and MISSISSIPPI STS., SAN FRANCISCO
Telephone Market 215

W. B. MORRIS, Pres. H. H. MORRIS, V.-P. L. J. GATES, Sec.

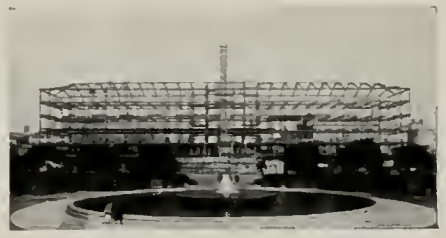


Steel Wheelbarrows in Stock

Western Iron Works

STRUCTURAL IRON AND STEEL CONTRACTORS

141-147 Beale St. and 132-148 Main St. SAN FRANCISCO
Phones: GARFIELD 2575—2576



Bliss & Faville, Architects

Steel Frame, California State Building, Civic Center, San Francisco.

FABRICATED BY

THE PALM IRON AND BRIDGE WORKS (Incorporated)

15th and R Streets, Sacramento

WESTERN ASBESTOS MAGNESIA CO.

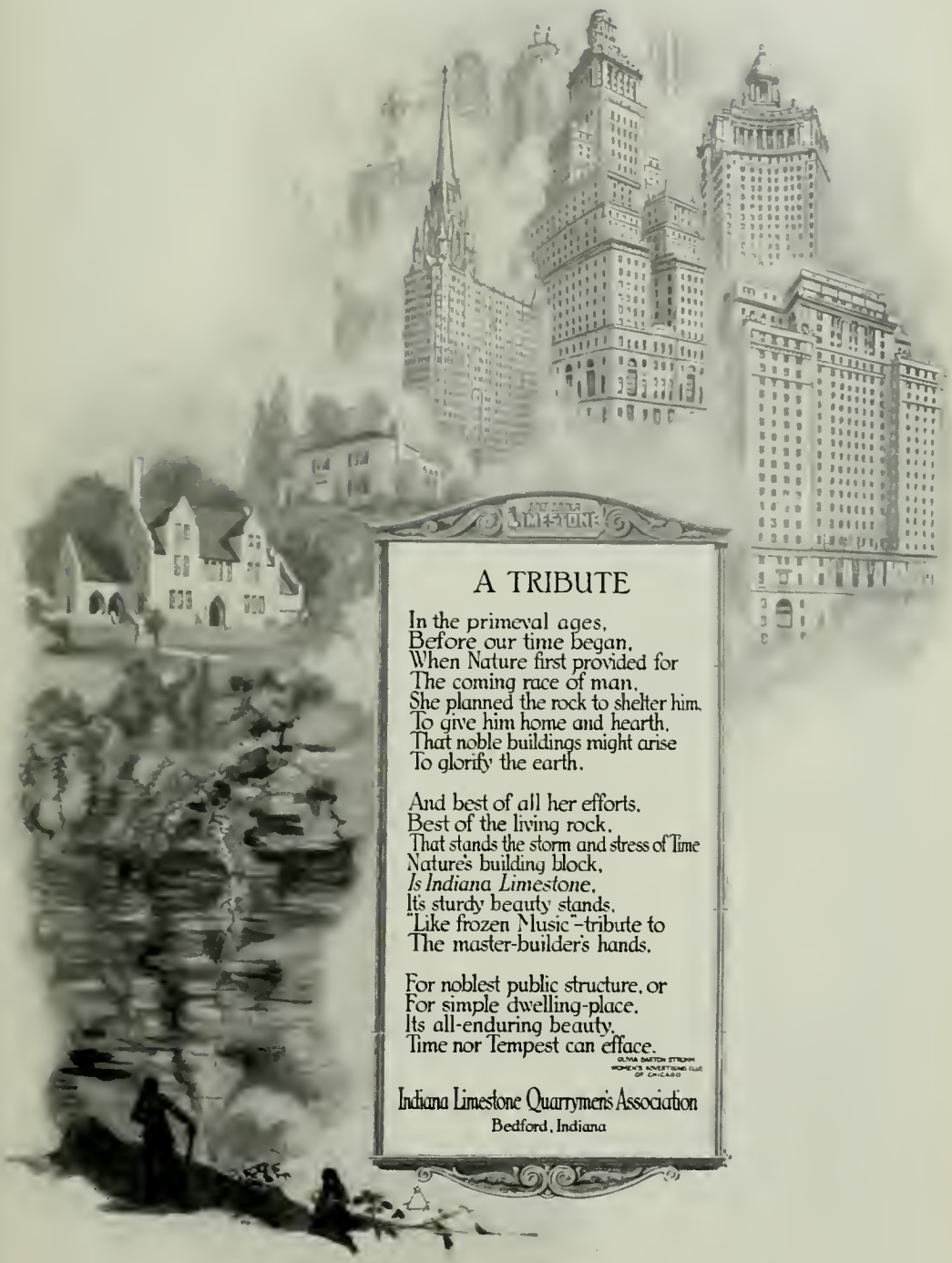
INSULATING ENGINEERS AND CONTRACTORS

CELOTEX
INSULATING LUMBER

PLASTER BASE
INSULATOR
SOUND DEADENER
ACOUSTIC CORRECTOR

Asbestos and Asphalt Slate Shingles and Roofings
Asbestos and Composition Roofings—Roof Coatings
Magnesia and Asbestos Pipe and Boiler Coverings
Cold Storage Insulation—Sectional Expansion Paving Joint
"Linofelt" Sound Deadener—Wall Board
Cork Pipe Covering, Board and Granulated Cork

21-29 South Park
Bet. 2nd and 3rd Sts.
Telephone Douglas 3860
San Francisco, Cal.



A TRIBUTE

In the primeval ages,
Before our time began,
When Nature first provided for
The coming race of man,
She planned the rock to shelter him,
To give him home and hearth,
That noble buildings might arise
To glorify the earth.

And best of all her efforts,
Best of the living rock,
That stands the storm and stress of Time
Nature's building block,
Is Indiana Limestone,
Its sturdy beauty stands,
"Like frozen Music"–tribute to
The master-builder's hands.

For noblest public structure, or
For simple dwelling-place,
Its all-enduring beauty,
Time nor Tempest can efface.

OLIVIA DAXTON STROHM
WOMEN'S ADVERTISING CLUB OF CHICAGO

Indiana Limestone Quarrymen's Association
Bedford, Indiana

Steam Heating and Ventilating

For Commercial and Public Buildings

Furnace Heating for the Home

Mangrum & Otter, Inc.

827-831 Mission Street San Francisco, Cal.

Phone Kearny 3155

Birchfield's furnish healthy, adequate, quick, economic hot water and steam heat.

Representatives:

Larimer & Lauer, Los Angeles

Walter S. Leland, 208 Balboa Bldg. San Francisco

BIRCHFIELD REG U.S. PAT. OFF.

Thermal Engineering Co., Salt Lake City; Power Equipment Co., Portland, Ore.; Walter B. Starky, Spokane, Wash.; Seattle Office, 816 American Bank Bldg.

Representatives:

Sullivan Valve & Engineering Co. Butte, Mont.

Vulcan Iron Works Ltd., Licensee Vancouver, B. C.

BIRCHFIELD BOILER CO.

Manufacturers Tacoma, Wash.

GIANT METAL, "RED METAL" AND STEEL

SASH CHAINS

COPPER AND STEEL

CABLE CHAINS

THE SMITH AND EGGE MFG. COMPANY

BRIDGEPORT, CONN.

ORIGINATORS OF SASH CHAIN

Rawlins & Smith 604 Mission Street, SAN FRANCISCO 618 American Bank Bldg., LOS ANGELES Coast Agents

---

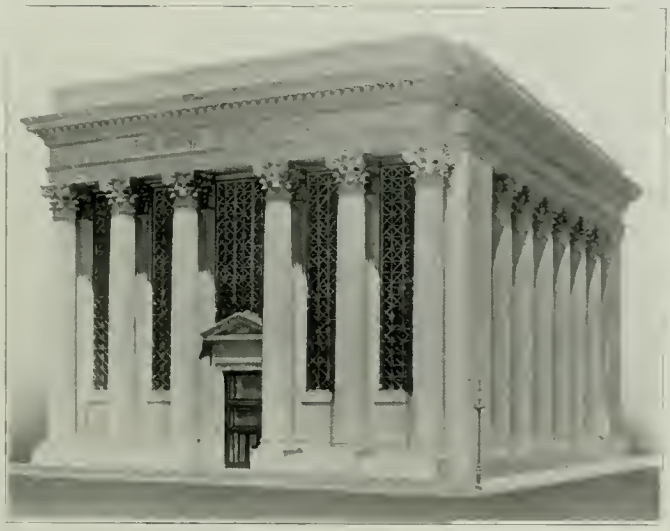
DETROIT STEEL PRODUCTS CO., Detroit

251 Kearny Street, San Francisco Phone Sutter 1250

Pacific Coast Branch Factory at Emeryville

GRANITE

It LOOKS Like a Bank



BLISS & FAVILLE, *Architects*

PEOPLE expect a bank to be strong, trustworthy and safe.

A bank may have the personnel, the equipment, and the integrity of purpose to live up to these expectations.

But to attract depositors it must have an **outward** appearance that matches its **inward** qualifications.

RAYMOND GRANITE gives to a bank building that appearance of strength, solidity, dignity and trustworthiness that makes the passerby instinctively believe that these qualities exist in the institution itself.

Peculiarly enough, they invariably do. We do not recollect of any bank built of RAYMOND GRANITE that has not been eminently successful.

RAYMOND GRANITE COMPANY
INCORPORATED
GRANITE ~ STONE CONTRACTORS BUILDING ~ MEMORIAL
3 POTRERO AVE SAN FRANCISCO 1350 PALMETTO STREET LOS ANGELES

Wilson

Garage at the Metropolitan Coal Co., Brookline, Mass.

There is an artistic side to rolling steel doors

JUST because rolling steel doors are intensely practical things, there is no reason why they shouldn't be made as good to look at as possible.

Take the shape of the slat, for instance. We have eliminated all sharp angles that are unsightly as well as impractical. Wilson slats have an even graceful shape and look the same on both sides.

Then our chain gear bracket is cast in one solid piece. This makes the ends of the coils look finished and neat. Of the many other refinements our new catalogue tells fully.

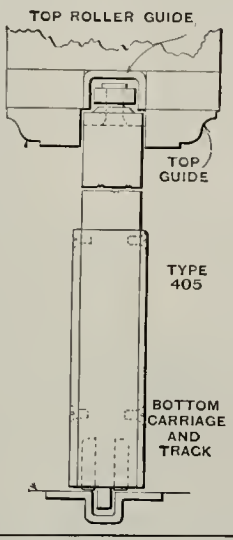
May we send you a copy.

The J. G. Wilson Corporation
621 N. Broadway, Los Angeles
1 East 36th Street, New York
Offices in Principal Cities

Established 1876
Wilson
DOORS - PARTITIONS - BLINDS
WARDROBES
THE J.G.WILSON CORPORATION
NEW YORK CITY

McCABE HANGERS

for
Accordion Doors
and
Folding Partitions



Arrange the partitions as you may desire and we can furnish the hangers to operate them.

Write for our set of details No. 4C.

THE McCABE HANGER MFG. CO.

W. H. Steel, Agt.
Los Angeles

425 W. 25th St.
New York

UNION OIL BUILDING, LOS ANGELES, CAL.
Curlett & Beelman, *Architects* Macdonald & Kahn, *Builders*

All Windows in This Building

are Metprodco Reversible Steel Sash designed to admit the maximum of light and ventilation, and allow cleaning from the inside with perfect safety. They can also be furnished with label of Underwriters Laboratories, Inc.

Pacific Flat Section Reversible Steel Sash of the same high quality but lighter in weight are furnished where additional economy is desired.

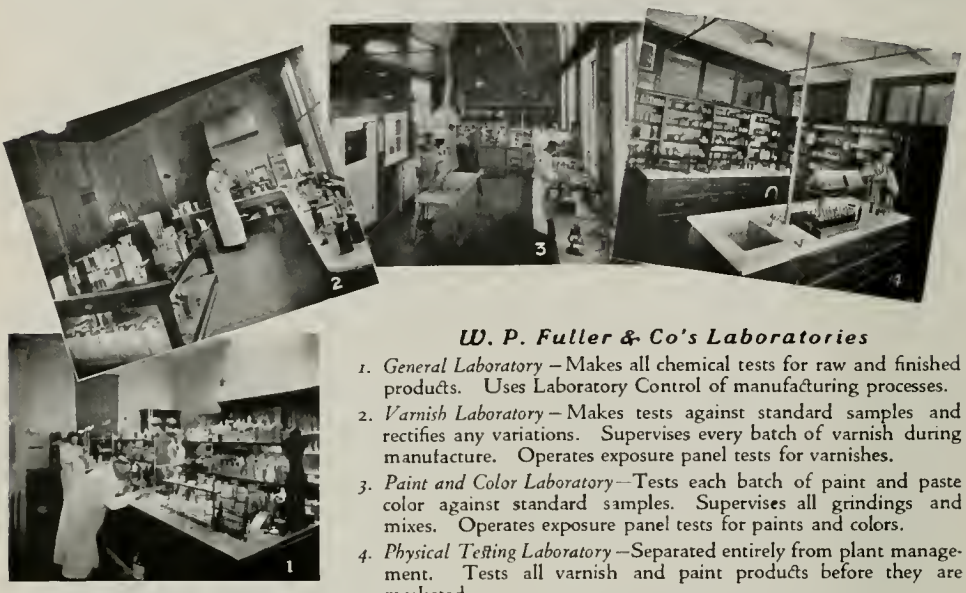
"PACIFIC COAST PRODUCTS"

UNITED STATES METAL PRODUCTS CO.

330 Tenth St., San Francisco, Calif.
Lumber Exchange, Seattle, Wash.
Exchange Bldg., Portland, Ore.
Bank of Italy Bldg., Los Angeles, Calif.
Paulsen Bldg., Spokane, Wash.
Provident Bldg., Tacoma, Wash.

(Pacific Sections used are rolled by Pacific Coast Steel Co.)

No. 2 of a Series on the Manufacture of Paint and Varnish



W. P. Fuller & Co's Laboratories

1. *General Laboratory* – Makes all chemical tests for raw and finished products. Uses Laboratory Control of manufacturing processes.
2. *Varnish Laboratory* – Makes tests against standard samples and rectifies any variations. Supervises every batch of varnish during manufacture. Operates exposure panel tests for varnishes.
3. *Paint and Color Laboratory*—Tests each batch of paint and paste color against standard samples. Supervises all grindings and mixes. Operates exposure panel tests for paints and colors.
4. *Physical Testing Laboratory*—Separated entirely from plant management. Tests all varnish and paint products before they are marketed.

Four Laboratories Maintain FULLER Quality

Our service department, on request, will give detailed information on proper methods of applying Fuller Products or aid in solving special problems of surface protection.

TO maintain the quality and durability of Fuller Paints, Varnishes and Enamels, able paint and varnish chemists and practical men test all raw materials that enter into Fuller Products; check all manufacturing processes; experiment to improve formulas that are the result of 74 years of experience, and test all finished products both by laboratory methods and under actual service conditions.

W · P · FULLER & CO.
301 Mission Street, San Francisco
21 Branches in Pacific Coast Cities - Factories: San Francisco and Los Angeles

FULLER
PAINTS Since '49 **VARNISHES**

BOWSER

Whether it is big installation or small, whether it is private or public garage, railroad, factory or dry cleaning plant, always specify Bowser equipment for oils and gasoline. You are assured of best service.

Our engineers will gladly serve you in planning the housing of gasoline and oil equipments.

Write to nearest Pacific Coast office for booklet A-03, and get the facts.

TANKS **DEPENDABLE** PUMPS

BOWSER 1885

Sales and Service Offices and Representatives Everywhere

Pump and Tank Headquarters
Fort Wayne, Indiana

612 Howard St., San Francisco

722-3 New Bank of Italy Building, Los Angeles

Why Take a Chance? An Investment With Protection is Better Than a Risk

YOU are taking a big chance if your building has unprotected window openings. It is not only constantly threatened by the buildings adjoining, but a fire within is quite likely to burst out of one window and re-enter through another. Recent fires have demonstrated this danger.

Kinnear Steel Rolling Shutters are not an experiment; they have been through the fire test and have made a wonderful record. Why take a chance when you can turn a risk into an investment?

Our illustrated book, "Exposure Hazard and Window Protection," tells about the protection and the investment. A copy will be sent upon request.

KINNEAR ROLLING · DOORS

THE KINNEAR
MANUFACTURING COMPANY
661-671 FIELD AVENUE
COLUMBUS, OHIO

Here's how to make sure the big job, the rush job, the difficult job, will go through aright and on time: turn to

GUNN, CARLE & CO.

for

Reinforcing Steel

FABRICATION—INSTALLATION

444 Market Street
Sutter 2720

Truscon Standard Steel Buildings

ARE BEING SPECIFIED BY ARCHITECTS AND ENGINEERS THROUGHOUT THE PACIFIC COAST

Heavy steel construction makes them permanent with minimum insurance.

A large number of these buildings now under construction and specified.

UNIT SYSTEM OF CONSTRUCTION
Makes 100 per cent Salvage

TRUSCON STEEL COMPANY

Chas. Halloway, Jr., Branch Manager
709 Mission Street, San Francisco. Phone Douglas 7135

For Casements and Windows Specify CRITTALLOY,—the Copper-Bearing Steel

CRITTALL
Steel Casements

Crittall Installation in Educational Hall University of Washington, Seattle. Bebb & Gould, Architects

Coast Representatives
J. E. Dwan
616 S. Utah St.
Los Angeles

Waterhouse-Wilcox Co.
523 Market St.
San Francisco

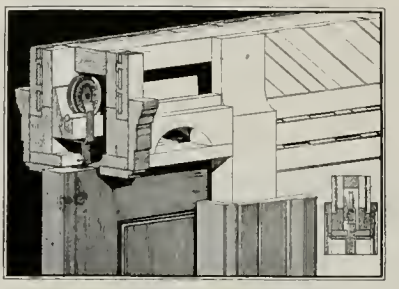
F. T. Crowe & Co.
508 Westlake Ave., N.
Seattle

McCracken-Ripley Co.
45 Fourth St.
Portland

The builders of Crittall steel casements, windows, and French doors have held leadership in this craft for generations. Made by hand, in many designs, Crittall products express an artistry that is traditional with this name. They are preferred by architects and home builders for the assurance vested in their reputation as well as for their grace, utility, and fine workmanship. Crittalloy, the copper-bearing steel, now adds greater endurance and rust-resisting qualities to all Crittall products.

CRITTALL CASEMENT WINDOW CO., *Manufacturers,* DETROIT

When writing to Advertisers please mention this magazine.



PITCHER DOOR HANGERS

RUN SMOOTHLY AND QUIETLY.
SPECIFIED BY LEADING ARCHITECTS FOR
RESIDENCES AND APARTMENT HOUSES

NATIONAL MILL & LUMBER CO.
318 MARKET STREET, SAN FRANCISCO

P I T C H E R

GOODS OF QUALITY

A new syphon action closet at a moderate price that is not only ultra-efficient but pleasing in appearance and combining many new sanitary features.

On display at our show room —

64 Sutter Street, San Francisco

Main office and warehouse: Sixth, Townsend & Bluxome Sts.

Holbrook, Merrill & Stetson

"Save the surface and you save all" Paint & Varnish

-the Varnish you specify

for the floors in your client's home will be subjected to the most severe tests.

It must stand scuffing from the kiddies' shoes when they play indoors.

It must stand the shuffling of feet when the rugs are turned back so that the latest fox trot can be tried.

It must resist the action of water.

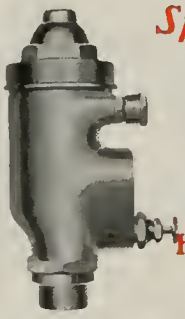
The failure to perform any of these duties means stained and discolored floors that have to be refinished at considerable cost and annoyance.

Specify Hueter's Floor Varnish for all coats on the finishing of floors and you will protect your clients with a varnish that *stands every test.*

Bass-Hueter Paint Co.

SAN FRANCISCO

Los Angeles Fresno Oakland
Portland Tacoma Seattle



Specify HANDY FLUSH VALVES

for the residence, office building or apartment house. It functions perfectly with any make or kind of bowl, gives perfect cleansing flush, washes bowl clean, and is NON-CLOGGING.

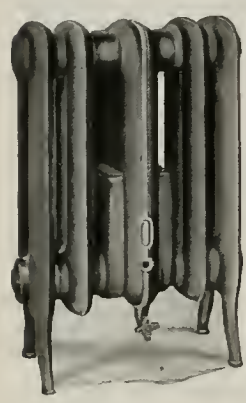
Model A—Indirect Flush for residences served by ½-inch supply pipe. Model B—Direct Flush for buildings served with ¾-inch or larger supply pipe.

Write for complete catalogue.

HANDY SELF-CLEANING FLUSH VALVE CO.

731 Folsom Street, San Francisco, Cal.

Demonstration in Universal Exhibits, Monadnock Building, San Francisco



ALL CAST IRON—3 Sizes (3, 5, and 7 Sections)

RA-DO FUMELESS GAS RADIATORS

The Ideal "Year-Round" Heating System For The Home—New or Old

Easiest and Cheapest to Install
Lowest Operating Cost

POTTER RADIATOR CORPORATION

5954 Pasadena Ave., LOS ANGELES
478 Sutter St., SAN FRANCISCO

FOR PERFECT ILLUMINATION

Specify Solar Lighting Fixtures

The most efficient commercial lighting unit on the market for diffusion and quality of light. A wide range of types from plain commercial to ornamental strap iron designs are carried in stock.

Write for Booklet Showing Complete Line

D. DIERSSEN COMPANY

20 Second Street San Francisco

The Scientific American says:

"The Paint That Won't Come Off"

For Waterproofing Basements — Walls

FOR ROOFS — TANKS — STACKS
CORNICE—PIPE—BRIDGES—PILING

Specified for New Stockton Roundhouse, Western Pacific Ry. Co.

Contains No Tar — No Asphaltum

U. S. Elaterite Products Co. of the Pacific

AMERICAN NATIONAL BANK BUILDING
Telephone Sutter 4810 San Francisco

Old Mission Portland Cement Company

Each shipment of "OLD MISSION" Portland Cement is guaranteed not only to equal but to surpass all requirements of the standard specifications for Portland Cement as adopted by the U. S. Government and by the American Society for Testing Materials. A Guarantee Certificate is mailed with the bill of lading of each car, giving number of car, date packed, and number of barrels, over the signature of the chief chemist.

8000 SACKS DAILY

SALES OFFICE:

MILLS BLDG., SAN FRANCISCO

PHONE SUTTER 3075

PLANT:

SAN JUAN, CAL.

Hauser Reversible

Window Fixtures

THIS Modern Apartment House in San Francisco designed by Architect E. E. Young, is equipped with the Hauser Type Fixture.

Manuactured and Installed by

Hauser Window Co.

1362 Harrison St.
SAN FRANCISCO Kearny 3706

PALACE HARDWARE CO.

Good Buildings Deserve Good Hardware

581 MARKET ST.

CORBIN

6063 SUTTER

"San Francisco's Leading Hardware Store"

George S. MacGruer
Robert M. Simpson
} Members of Builders Exchange

MacGruer & Simpson

CONTRACTING PLASTERERS

PLAIN AND ORNAMENTAL

Cement, Stucco and Artificial Stone

Phone Garfield 512

266 Tehama Street, San Francisco

Constant Vigilance the Price of Quality

To the man on the street, cement may seem nothing more than an uninteresting gray powder which is used in construction work. But to the chemist—the trained scientist who knows—it has a pedigree. To him cement is a carefully compounded product, the result of a long series of chemical and mechanical operations, checked by the unremitting watchfulness of modern laboratory skill.

At every stage in its manufacture from quarry to loaded box car, portland cement and the materials from which it is made are subjected to the most exacting scientific tests.

The geologist and the chemist must make their examinations and approve the available raw materials even before the site for a mill is chosen.

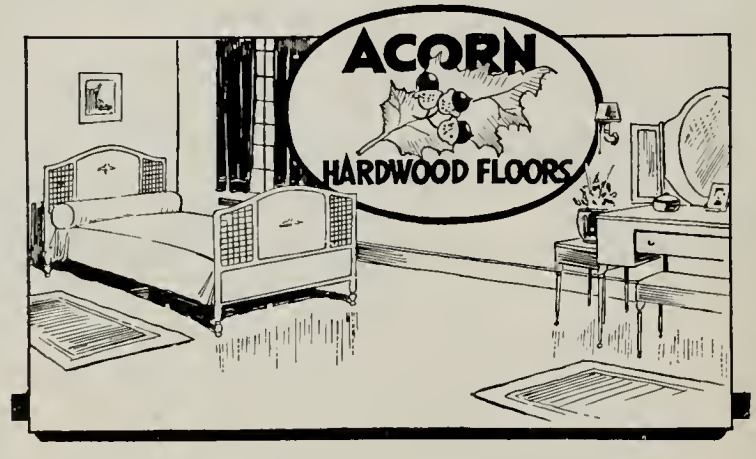
Once the mill's machinery is busily making cement, chemists and physicists test raw materials and finished product at least eleven times.

The plant laboratory operates 24 hours a day to maintain constant control on every process. Finally, each carload is sampled before the railroad hauls it away. Cement is a quality product.

PORTLAND CEMENT ASSOCIATION

A National Organization
to Improve and Extend the Uses of Concrete

Atlanta	Des Moines	Los Angeles	Parkersburg	San Francisco
Boston	Detroit	Milwaukee	Philadelphia	Seattle
Chicago	Helena	Minneapolis	Pittsburgh	St. Louis
Dallas	Indianapolis	New Orleans	Portland, Oreg.	Vancouver, B. C.
Denver	Kansas City	New York	Salt Lake City	Washington, D. C.



FOR EVERY ROOM

WHEN hardwood floors were first used they were considered a luxury, and were laid only in the living and dining rooms. That was when women desired hardwood floors for beauty only—and because they were "the thing." But before long women who had both hardwood and softwood floors in their homes saw the difference. It was twice as easy to care for the hardwood floors, and their sanitary features recommended them for bedrooms and halls.

The superior advantages of hardwood floors for every room are now generally admitted. Thousands of home builders are asking their architects or contractors to specify ACORN Brand American-grown Oak Flooring, because it carries a guarantee.

ACORN FLOORING is carefully selected, graded and milled, yet it costs no more.

STRABLE HARDWOOD COMPANY

DISTRIBUTORS

STRABLEWOOD QUALITY HARDWOODS

537 First Street **Oakland, California**

The Harkness Memorial Tower at Yale

and ATLAS WHITE PORTLAND CEMENT

SOMEONE has called great architecture "frozen music"—a name well justified when applied to such monumental work as the Memorial Quadrangle at Yale, created by James Gamble Rogers. Towering above the group is the Harkness Memorial Tower, a fitting crown to the whole.

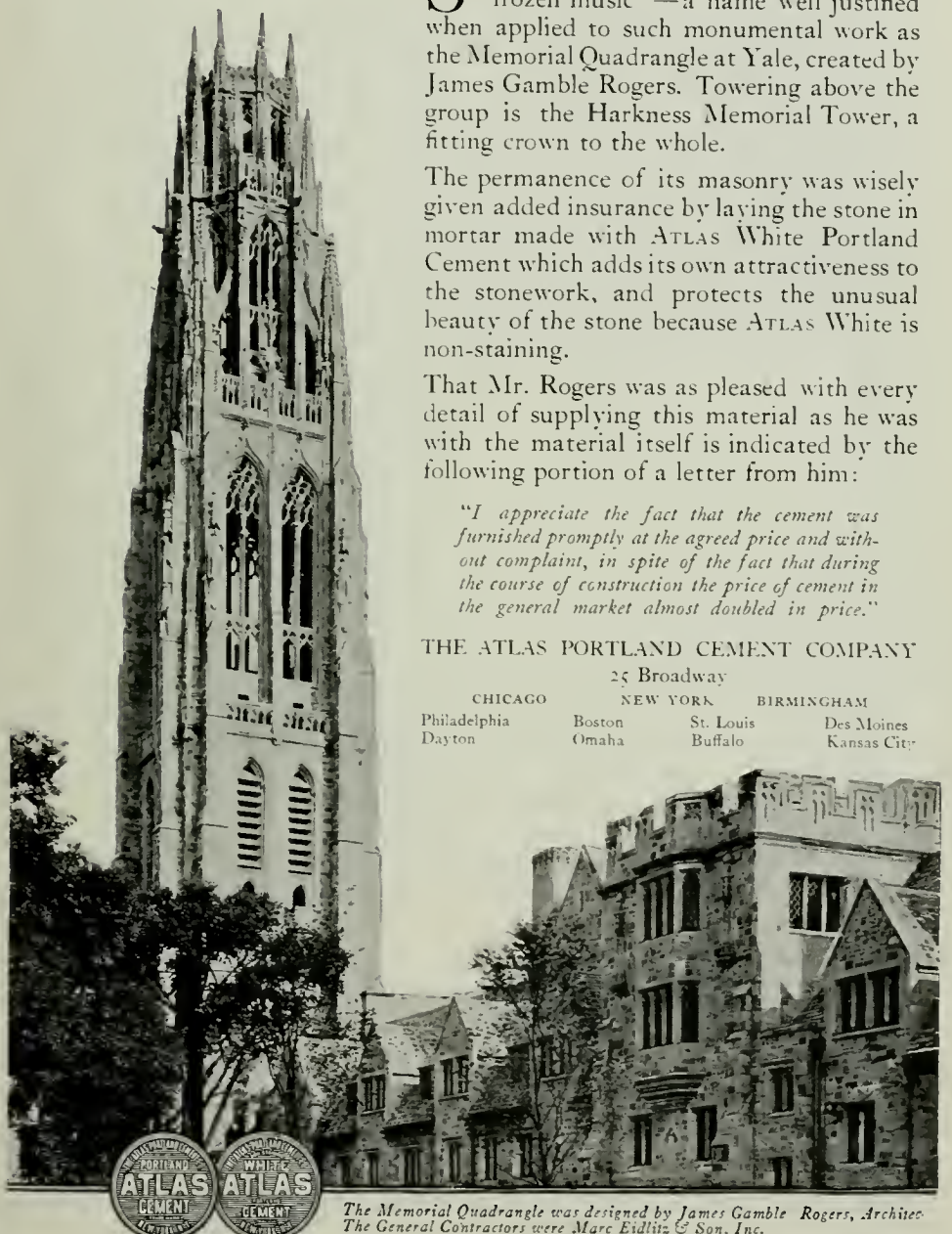
The permanence of its masonry was wisely given added insurance by laying the stone in mortar made with ATLAS White Portland Cement which adds its own attractiveness to the stonework, and protects the unusual beauty of the stone because ATLAS White is non-staining.

That Mr. Rogers was as pleased with every detail of supplying this material as he was with the material itself is indicated by the following portion of a letter from him:

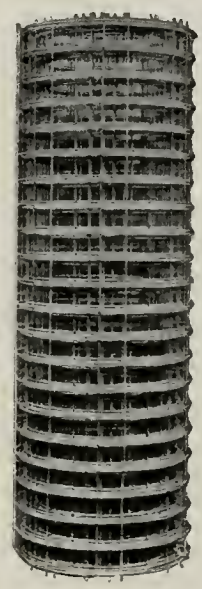
> *"I appreciate the fact that the cement was furnished promptly at the agreed price and without complaint, in spite of the fact that during the course of construction the price of cement in the general market almost doubled in price."*

THE ATLAS PORTLAND CEMENT COMPANY
25 Broadway

CHICAGO	NEW YORK	BIRMINGHAM	
Philadelphia	Boston	St. Louis	Des Moines
Dayton	Omaha	Buffalo	Kansas City



The Memorial Quadrangle was designed by James Gamble Rogers, Architect. The General Contractors were Marc Eidlitz & Son, Inc.



Clinton

Electrically welded Wire Fabric

The Ideal Mesh Reinforcement for Concrete

Immediate Shipment from Stock
San Francisco
Los Angeles
Seattle

Wickwire Spencer Steel Corporation

SAN FRANCISCO
144 Townsend St.
Douglas 1421

LOS ANGELES
316 E. Market St.
Pico 4851

Recent

Office Buildings

STANDARD OIL
SAN FRANCISCO

MATSON
NAVIGATION CO.
SAN FRANCISCO

CALIFORNIA STATE
LIFE INSURANCE
COMPANY
SACRAMENTO

Lindgren Company

BUILDERS

Monadnock Building

Phone Douglas 2647 *San Francisco*

Specify

"Merced" Roofing Tile

BURNED clay roofing tile is now being used for almost every type of architecture, educational and business institutions, churches, homes, industrial plants.

Besides being fireproof, a properly laid tile roof is free from leaks and will not call for repairs.

CALIFORNIA POTTERY CO.

579-583 MILLS BLDG.
SAN FRANCISCO, CALIF.
Merced Oakland Fresno

We also manufacture the following products:

Sewer Pipe and Fittings — Chimney Pipe and Fittings — Flue Lining — HollowBuilding Tile—Partition Tile — Drain Tile

Specify

BIRCHFIELD

STEEL HEATING BOILER

BIRCHFIELD BOILER CO.

TACOMA, *Manufacturers* WASH.

Representatives: Larimer & Lauer, Los Angeles; Walter S. Leland, 208 Balboa Bldg., S. F.; Thermal Engineering Co., Salt Lake City; Power Equipment Co., Portland, Ore.; Walter B. Starky, Spokane, Wash.; Seattle Office, 816 American Bank Building; Sullivan Valve & Engineering Co. Butte, Mont.

A Four-Color Harmony *of* Especial Interest

Another beautiful harmony has resulted from our co-operation with C. Howard Crane, architect for The American Pond & Mortgage Co., N. Y. City.

Here indeed is a skilful combining of four different colors—black and gold, genuine Hauteville M. H. quality, and pink and gray Tennessee T. K. quality.

To those of you who are seeking to render an ideal in marble, our 30 years' experience with domestic and imported marble might also be of service.

TOMPKINS-KIEL MARBLE COMPANY

505 FIFTH AVENUE
NEW YORK CITY

DISTRIBUTORS MARBLE-STONE

CHICAGO
PHILADELPHIA
SAN FRANCISCO

A. F. Edwards, Pres.
J. M. Fabbris, Vice-Pres.
J. A. Mackenzie, Secy.

Office Telephone Market 5070

Chas. F. Eisele, Asst. Mgr.
J. Rubiolo, Asst. Mgr.
D. A. Batsford, Asst. Mgr.

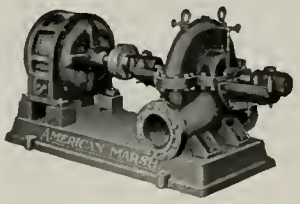
AMERICAN MARBLE & MOSAIC CO.

25-59 Columbia Square, San Francisco, Calif.

Near Folsom St., Bet. 6th and 7th Sts.

Factory on Water Front, South San Francisco. Phone South San Francisco 161

PUMPING MACHINERY



"AMERICAN-MARSH"
House, Sump *and*
Fire Pumps

FOR ALL SPECIFICATIONS

SIMONDS MACHINERY CO., 117-121 New Montgomery Street
PHONE KEARNY 1457 SAN FRANCISCO

DISTRIBUTORS

Murphy Varnish Co. —— U. S. Gutta Percha (BARRELED SUNLIGHT)

UHL BROS.

WALL PAPER PAINTS

SAN FRANCISCO LOS ANGELES OAKLAND PORTLAND SEATTLE

Pack your Radiator Valves with

Palmetto Twist Packing

It can be unstranded to fit any
size Valve. It does not get hard

H. N. COOK BELTING CO.

401-433 Howard St., San Francisco, Cal.

SILVER FLASH CRANK CASE SERVICE STATION, INDIANAPOLIS, INDIANA
Bass, Knowlton & Co., Architects
Henry C. Smithers Roofing Company, Sheet Metal Work.

WHEN the Western Refining Company's designing architect specified the sheet metal for this large and modern crank case service station, he specified galvanized Armco-Ingot Iron.

And every pound of sheet metal in this installation is galvanized Armco-Ingot Iron.

Even the glass sign is framed with Armco-Ingot Iron, the same iron used for ridge roll, terminals, hip cresting, cornice, dividing mould, gutters, and down spouts.

Galvanized Armco-Ingot Iron is a sheet metal that withstands corrosion. It lasts longer than common steel. It is preferred by builders because it is the most economical.

Where to Order: San Francisco Warehouse, Tenth and Bryant Streets; California Cornice Works, Los Angeles; A. M. Castle Co. of Washington, Seattle; Spokane Sheet Metal Supply Co., Spokane.

Write for free booklet "What's Under the Galvanized Coating?"

THE AMERICAN ROLLING MILL COMPANY
Middletown, Ohio

ARMCO
TRADE MARK
INGOT IRON

EVANS VANISHING DOOR

wardrobes are the practical and efficient installation for the saving of floor space, lowering the cost of construction and upkeep, and making for the convenience and sanitation of the MODERN SCHOOL.

WARDROBES, Class A, made with Panel Backs, Ends and Divisions, and with doors that swing—not slide—on double-pivoted arms, no guides, tracks or rollers, no rattle or squeak; they rate 100 per cent. in conservation of space, easy and noiseless operation, perfect sanitation and ventilation. Doors cannot stick or bind. They move with a touch. Hardware can also be purchased separately.

More Than a Million Hang Their Wraps in Evans Vanishing Door Wardrobes

Trade Mark
VANISHING DOOR
U. S. Reg.

Catalog
"PICTURES THAT TALK"
Sent on Request

700 Block B **W. L. EVANS** Washington, Ind.

Every Room Adds at Least $1,000 to the Cost of a Home or Apartment House

Hotel Cecil, San Francisco
Equipped with Wall Beds

Portal Wall Beds

are real space and cost savers. Those who would build wisely in these days of flunctuating prices, provide for PORTAL WALL BEDS.

MARSHALL & STEARNS CO.
WALL BEDS
"HIGHEST AWARD ALWAYS"

1152 Phelan Building
San Francisco

1774 Broadway
Oakland

P. T. BURTIS RESIDENCE. SACRAMENTO, CALIF.
Dean & Dean. *Architects*

The soft blendings of russet brown, purple, buff and rose shades of our English Broad Pan Tiles together with the beautiful rug-like texture, due to the irregular laying, have created a magnificient color harmony on this roof.

LATIN TILES

with their natural color ranges give the architect an outlet for color expression that creates homes of rare beauty and life-long permanence.

GLADDING, McBEAN & CO.

FOUNDED · 1875

Crocker Building, San Francisco
Trust & Savings Building, Los Angeles

Works at
Lincoln, California

FESS SYSTEM

The true TURBINE

READ WHAT ONE OF THE LARGEST REALTY FIRMS ON THE PACIFIC COAST THINK OF OUR EQUIPMENT AND REAL "honest-to-goodness" SERVICE

"We do not hesitate to say that our experience with the Fese Rotary Burner is the most satisfactory in every way. We have had quite a number of the ■ Burners in operation and have been satisfactory, although the repairs have been more, due possibly to the fact that they have had several different representatives here in our city and the service behind them has not been as good as that behind the Fess Burner, which have had the same agency for a period of ten or twelve years and has been eminently satisfactory."

218-220 Natoma Street San Francisco

Phones Sutter 6927-6928

SPECIFY AND INSIST UPON FESS SYSTEM

934 Santee Street Los Angeles

Bdwy 1375

AUTHORIZED AGENCIES AND SERVICE IN ALL PRINCIPAL CITIES

The Coen System

of Mechanical Oil Burning

[Pressure System]

Equipped with complete automatic control was specified for the new Community Hospital for San Mateo County, W. H. Toepke, Architect.

The Coen System was specified because it is the best and most economical oil burning system for use in high-pressure power plants.

Write for complete data.

COEN COMPANY, Inc.

112 MARKET STREET, SAN FRANCISCO
Phone Sutter 2838

Los Angeles, Cal. 428 Story Bldg.

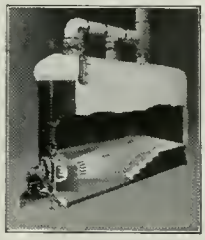
Seattle, Wash. 303 Railroad Ave., South

Portland, Ore. 51 First Street

JOHNSON'S ROTARY CRUDE OIL BURNER

Can be installed in any BOILER or FURNACE

Gives Satisfactory Results
Simple to Operate—Automatic—Safe
Let us tell you more about this Oil Burner.



BURNER IN OPERATION

S. T. JOHNSON CO.

1337 Mission Street
San Francisco
Phone Market 2759

940 Arlington Street
Oakland
Phone Piedmont 2815

Agencies: SEATTLE LOS ANGELES FRESNO SAN DIEGO SACRAMENTO

SIMPLEX
TRADE MARK

SIMPLEX BURNERS

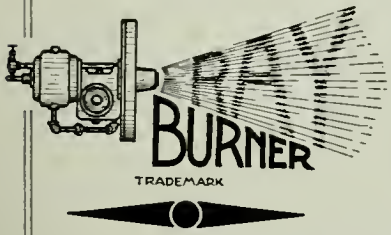
For High or Low Pressure Boilers, Water Heaters, Kiln Dryers, Furnaces, Etc. Operated by Fractional H. P. Motors. Guaranteed for Efficiency and Durability.

BUNTING IRON WORKS

Factory Berkeley

1215 FIRST NATIONAL BANK BLDG.
SAN FRANCISCO Phone Sutter 3225

Member of the Oil Burners Manufacturers' Association of California



Rotary Fuel Oil Burners

FOR HEATING, POWER PLANTS And Industrial Uses

ADAPTED FOR ANY TYPE OF BOILER OR FURNACE
—HIGH OR LOW PRESSURE, 6 to 600 h. p.

W. S. RAY MANUFACTURING CO.
MANUFACTURERS OF RAY FUEL OIL BURNERS

OFFICE AND SALESROOM:
Rialto Building, SAN FRANCISCO
Phone Douglas 8079

Distributors
in all Principal Cities

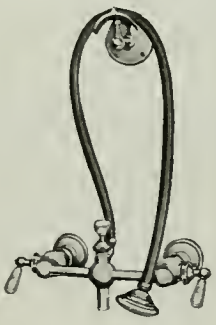
OAKLAND BRANCH
25th and San Pablo Avenue
Phone Oakland 3944

MUELLER

Faucets give full value in wear and service.

The MUELLER COMBINATION SINK FAUCET is especially desirable—Hot, Cold or Tempered water through spout or spray?

THE NEWEST AND BEST THING IN FAUCETS



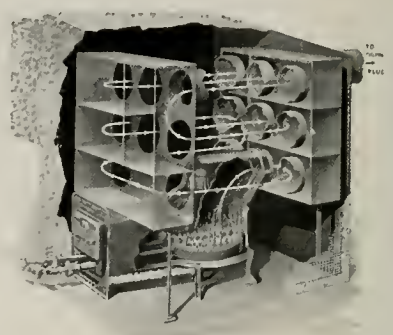
H. MUELLER MFG. CO.

635 MISSION STREET SAN FRANCISCO, CALIF.

THE
BABCOCK
"HIGH EFFICIENCY"
GAS FURNACE

is designed by gas engineers. Long fire travel and a large radiation surface. Gives odorless heat with the natural moisture of the air retained. No condensation at the joints, no corrosion, no leaks.

A 5 year guarantee covers every furnace.



San Francisco Distributor
FRANK KLIMM, 456 Ellis St.

Alameda County Distributor
PACIFIC GAS APPLIANCE CO.
1533 Clay St., Oakland

Babcock GAS FURNACE

C. B. BABCOCK COMPANY
768 MISSION STREET, SAN FRANCISCO
MANUFACTURERS AND DISTRIBUTORS OF GAS EQUIPMENT

LITTLE GIANT TRADE MARK

Pump Governors
Oil-Burner Governors
Reducing Valves
Safety Valves
Oil Valves
Blow Off Valves
Boiler Feed Valves
Vacuum Pump Governors
Vacuum Regulating Valves
Oil Pumping Sets
Little Giant Improved Oil Burners
Duplex Oil Pumps
Rotary Oil Pumps
Oil Heaters
Draft Gauges
Boiled Feed Pumps

G. E. WITT CO., Inc., Engineers
C. W. VAUGHN, President and Manager
MANUFACTURERS AND DISTRIBUTORS
862-864 Howard St. Phone Douglas 4404 San Francisco, Cal.

SAFETY TREADS

UNDERWRITERS' LABORATORIES, INC. INSPECTED ANTI-SLIP TREAD
FERALUN AMERICAN ABRASIVE METALS CO NEW YORK

Affords the maximum of safety and there are NO GROOVES to catch the heels

PACIFIC MATERIALS CO.
525 Market Street, San Francisco, Calif.

the ARCHITECT & ENGINEER

Contents

VOL. LXXIV. JULY, 1923 Number 1

SKETCH FOR INTERIOR, BUILDING FOR THE CALIFORNIA BODIES OF THE SCOTTISH RITE, SAN FRANCISCO - *Frontispiece*
Weeks and Day, Architects

SOME CONTRASTS OF ROMANTIC AND CLASSIC - - - 51
Irving F. Morrow

THE ARCHITECT AS AN ILLUMINATING ENGINEER - - 91
W. L. Stockwell

THE ARCHITECT'S WIFE - - - - - - - - - - 94

OLDEST SAWN SHINGLE IN CALIFORNIA - - - - - 96

FIFTY-SIXTH CONVENTION OF AMERICAN INSTITUTE OF ARCHITECTS - - - - - - - - - - - - 97

THE ARCHITECT AND THE SALESMAN - - - - - 99

A WORD TO ARCHITECTS - - - - - - - - - 101

PAINTING OF RADIATORS - - - - - - - - - 103

FLOOR LOADS FOR OFFICE BUILDINGS - - - - - 104

WHY CHIMNEYS LEAN EASTWARD - - - - - - 105

EDITORIAL - - - - - - - - - - - - - 106

WITH THE ARCHITECTS - - - - - - - - - - 109

FIELD OF THE CONTRACTOR - - - - - - - - 113

THE ENGINEER - - - - - - - - - - - - 116

Published Monthly by
THE ARCHITECT *and* ENGINEER *Inc.*
626-627 Foxcroft Building San Francisco
W. J. Kieruff, *President* — Frederick W. Jones, *Vice-President* — L. B. Penhorwood, *Secretary*

SKETCH FOR INTERIOR, BUILDING FOR THE CALIFORNIA BODIES OF THE SCOTTISH RITE, SAN FRANCISCO
WEEKS & DAY ARCHITECTS

x 720.5
Ar 24 74
2:9017

THE
ARCHITECT
AND
ENGINEER

JULY
1923

VOL. LXXIV.
No. 1

Some Contrasts of Romantic and Classic

By IRVING F. MORROW

IT is unfortunate that architectural journals can not publish buildings in color. Perhaps it is not fantastic to imagine that some day such a policy may fall within the realm of economic possibility. Not many years ago it would have seemed no less fanciful to suggest the lavish use of black and white reproductions which obtains today. Meanwhile, without overlooking the importance to the arts of the photograph and photographic processes of reproduction, one may well question whether their necessary monochrome has not had a part in inducing a public (and professional) apathy, even aversion, to color in architecture. There has been a long and persistent tradition to the effect that the only medium for really serious building is white stone, a norm to which lesser design should conform as best it might. The tradition is weakening, sometimes with startling reactions, in the field of the lesser design; but it is still generally felt that all materials for respectably clothing monumental concepts must be thoroughly bleached.

I am moved to these reflections by regret that the designs of Messrs. Weeks and Day must appear deprived of that color which in so many instances is an element quite essential to their being. Theirs is not monochrome architecture; it is eloquently polychrome. Sometimes the color inheres in the choice of materials, as in the quiet brick and terra cotta of the Phelan home, the more conventional but nicely felt brick and stone toothing of the Bradley house, or the exuberant tile floors and inlays in the Don Lee Building.* At other times the color is painted, as in the decorative ceilings of the Don Lee Building and

* The Don Lee Building was fully illustrated in The Architect and Engineer for October, 1921 (Vol. LXVII, No. 1).

the various theaters. There are delightful bits in their offices which I could wish to have shown, but which would be so far lost without the life of color as to leave reproduction next to meaningless. There is current an impression that color in architecture is an optional adjunct, a mere efflorescence upon form, unessential, even unarchitectural in the proper sense of the word. It is the idea I touched upon above, that the photograph will show all that is architecture strictly speaking, and that the rest, however pleasant, is unimportant. That this is a misconception will be appreciated by anyone who, knowing architecture which is

MISSION INN, RIVERSIDE, CALIFORNIA
Sketch by Charles Peter Weeks

polychrome in its inception, such as that of Weeks and Day, compares it with the photograph. That which is lost is more than a decorative excrescence. It is a vital element. One may as well hold that a melody suffers no essential violence if played without the harmony particular to it; or, to use a musical analogy even more accurate and suggestive, who would contend that an orchestral composition is undamaged by reduction to the monochrome of a piano arrangement? Were all music known only by piano arrangements, the sense of vocal and orchestral variety would doubtless wane.

Obvious enjoyment has been drawn from this preoccupation with color. It has been assumed with conviction and assurance. Four six-inch tile "insets" in the chaste isolation of several thousand square feet of white plaster may startle the timid and half-hearted into a reckless belief that they are using polychrome. Messrs. Weeks and Day have literally accepted the term's etymology and without qualms. This is not to say that their schemes are always bright, but that they are thoroughly considered and consistent. The same interest is shown in the sketches from the hand of Mr. Weeks—sketches which, it may be said

TELEGRAPH HILL, SAN FRANCISCO
Sketch by Charles Peter Weeks

in passing, were made for the author's own diversion, and without thought of publication, but of which I have considered it worth while to publish several for that very reason. The architectural sketches are handled with delicacy of touch and the lightest suggestions of color. The landscape, on the other hand, is vigorous and simplified almost to the point of crudity, and curiously, intrigueingly modern in feeling. (I say "curiously modern" because the artistic life of architects is habitually so exclusively in the past.) Such purely artistic excursions on an architect's part have importance often above their intrinsic worth, as

indications of outlook and attitude of mind; but I shall add that the spirit and sureness of Mr. Week's sketches gave me genuine pleasure; more, perhaps, than may be appreciated by readers of the magazine, who must see them, like the architecture, deprived of their essential element of color.

This interest in color is perhaps only the most obvious aspect of a general romantic tendency in Messrs. Weeks and Day's design. "Romantic" may be an equivocal word. I use it for want of a better one immediately at hand, to suggest an interest in forms which are mobile, personal, and little used, as contrasted with those more fixed and impersonal ones generally designated as "classic." It is true that their work ranges through a wide variety of expression, but the less formal types are more characteristic. They are more enjoyable because they appear to have been more enjoyed in the doing. The Don Lee Building and the theaters are vigorous and lively. A preliminary study for the

MT. SAN JACINTO
Sketch by Charles Peter Weeks

exterior of the Fox theater suggests somewhat more freedom, if less finesse, than appears in the executed design, for all the care of its final working out. I can only speculate as to reasons for the change in spirit, but any architect's professional experience will make the phenomenon easily explicable.

Their most serious excursion into the monumental is the group of Capitol Extension Buildings at Sacramento. These two buildings are classic in the best sense of the word; their dignity is a fitting symbol of the State, as conventionally conceived. There is more individuality in plan than in architectural expression. The office building in particular is exceptionally well arranged for business like public affairs conducted in large departments or commissions, each of which has but one point of contact with the public. For here we have a geometrically central nucleus of circulation with four radial aisles of communication on each floor, leading out to the mid-points on the four sides of a well-

lit perimeter of offices. It is one of those novelties which are so simple and logical that people not analytically inclined will dismiss it from mind as just natural. We must pause, therefore, to underline so efficient and able a piece of planning. I regret only that the more intimate personality which marks Messrs. Weeks and Day's lesser work has here given way to certain exigencies of official decorum. Some of the small decorative sculptural panels of Mr. Edward Field Sanford, Jr. (three of which are shown on the cover and pages 56 and 57), have a modern and a personal note. The pediments are two of the largest, ablest, most impressive compositions of architectural sculpture executed on the Pacific Coast.

I cannot help speculating on the result had these buildings been outright awards to Messrs. Weeks and Day, instead of the result of competition. It may be that the exigencies of site, the proximity of the existing Capitol building, and the necessity for monumentality would

HOUSE AT SANTA BARBARA, CALIFORNIA
Sketch by Charles Peter Weeks

have conspired in favor of solutions not unlike the present ones. Yet I believe that it is the tendency of competitions to make for suppression of personality. An architect working out his own job consults his own preferences, and confronts his client with the possibility of argument. In a competition he works in isolation, and is impelled to do what he thinks is expected. I like to think that if the Capitol extension buildings had been conceived without this presumed initial bias they might have shown more of the romantic flavor which I have admired in other work of Messrs. Weeks and Day. I do not wish this to be misinterpreted as condemnation. I give these buildings full credit for their manifest merits—simplicity, dignity, grace, poise, careful study, and purity of style. But they are, as it were, unsigned; that is to say, there are not wanting other architects who might have conceived and worked them out; and the loss of personality is a serious thing—indeed, the most serious shortcoming of American monumental architecture.

The contributions which Messrs. Weeks and Day have made to commercial or industrial design—buildings like the Don Lee Building and the new Chronicle Building—may have a significance even above and beyond their abstract merits as design. For here we have practical demonstration that the business and industry by which our communities live need not be conducted in entire disregard of the civilized intercourse which is supposed to distinguish men as men. Every wedge driven in behalf of simple humanity is a matter of social importance.

* * * *

SCULPTURAL PANEL, CAPITOL EXTENSION BUILDINGS, SACRAMENTO
Weeks & Day, Architects
Edward Field Sanford, Jr., Sculptor

The sculptural pediments of the Capitol Extension Buildings are illustrative of the history and characteristics of California. For the benefit of those interested in the literary background of these compositions the following explanation of the symbolism is appended:

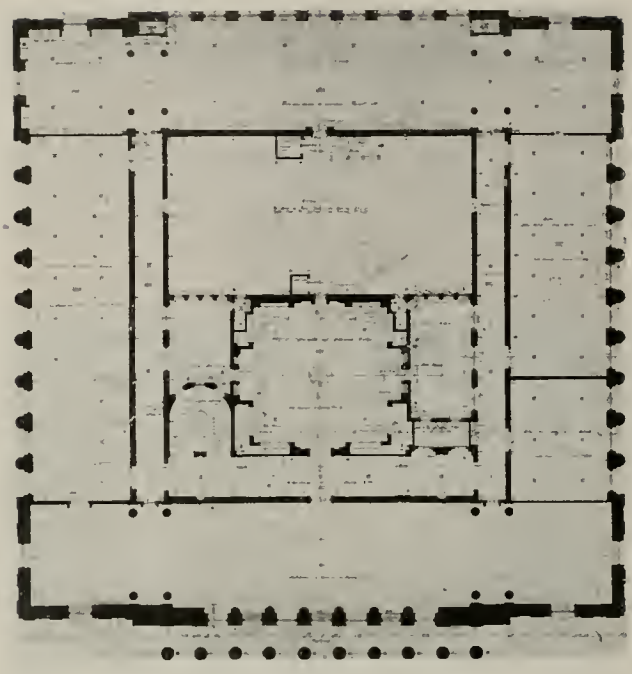
"Library Building: The central figure is the fully developed California with a sword of Justice in her right hand and the Owl of Wisdom in her left. On her right stands a figure representing Statesmanship. On her left, her Warrior Son. With Pegasus, symbolic of Romance and Poetry, who strikes with his hoof a stone from which spring the rivers, are grouped two figures, Art and Beauty; with the team of horses are grouped two figures representing Flora and Pomona. In the rear of

these work horses, which are symbolic of Agriculture, is a figure with a sickle representing the Harvester. The corner is filled with a female figure of Progress and the California Bear. In the rear of Pegasus is a female figure with a Treasure Chest, symbolic of wealth; the corner on this side is filled with a male figure representing Commerce and the Mountain Lion.

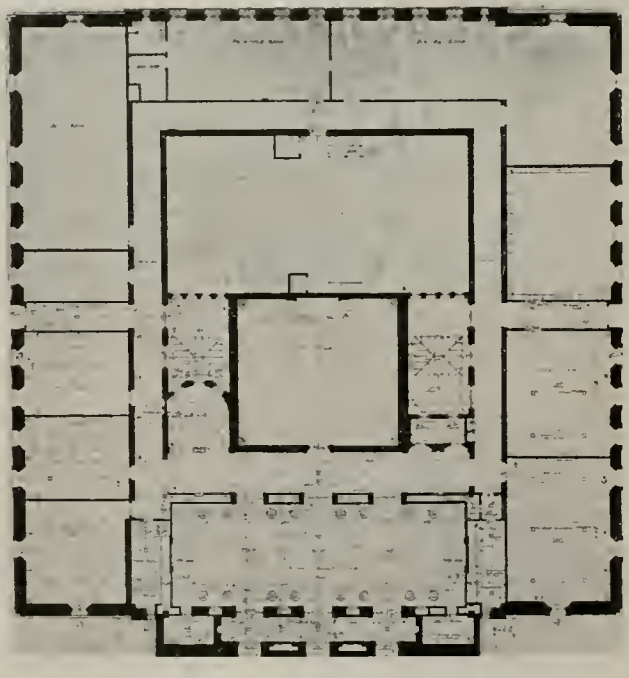
"Office Building: In the center is a brutal figure representing the Undeveloped California welcoming the World with open arms. She is flanked on one side by a monk, symbolic of the Church and Spanish

SCULPTURAL PANEL, CAPITOL EXTENSION BUILDINGS, SACRAMENTO
Weeks & Day, Architects
Edward Field Sanford, Jr., Sculptor

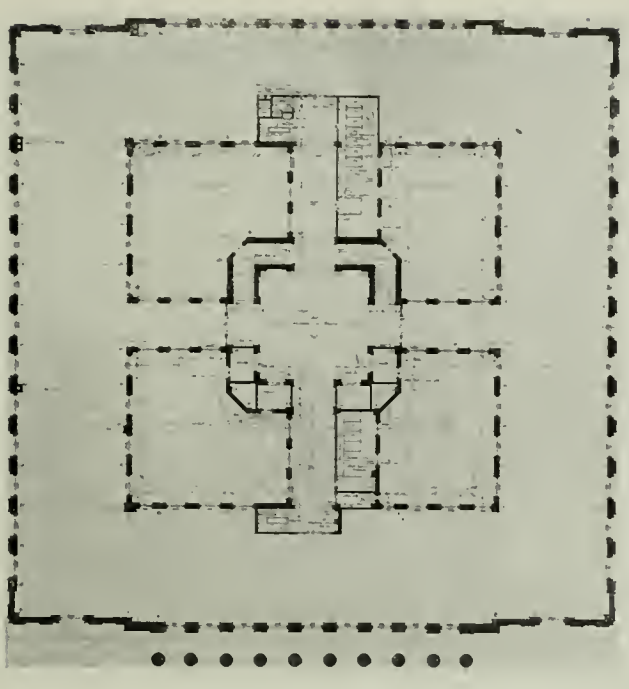
period; on the other side by a figure representing the Mexican epoch. To the right of the Mexican, with the Buffalo, is a group representing Agriculture with a female figure of Energy. Behind the Buffalo is a group symbolic of the rough phase of the early days, that corner being filled by a wounded man. On the other side, and with the Oxen, are grouped the early Settlers with an allegorical figure of Courage. In the rear of the Oxen is a Miner panning gold. Next comes a Mother and Child symbolic of the new blood and virility of the coming generation. The corner of this pediment is filled with a settler blowing his fire. The four seated figures represent Climate, Mineral Wealth, Vegetable Abundance and Romantic History."



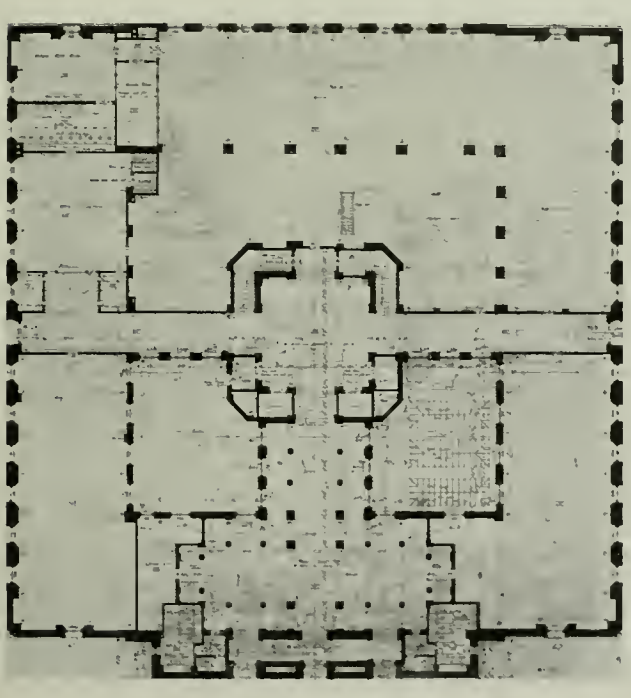
PLAN OF THIRD FLOOR



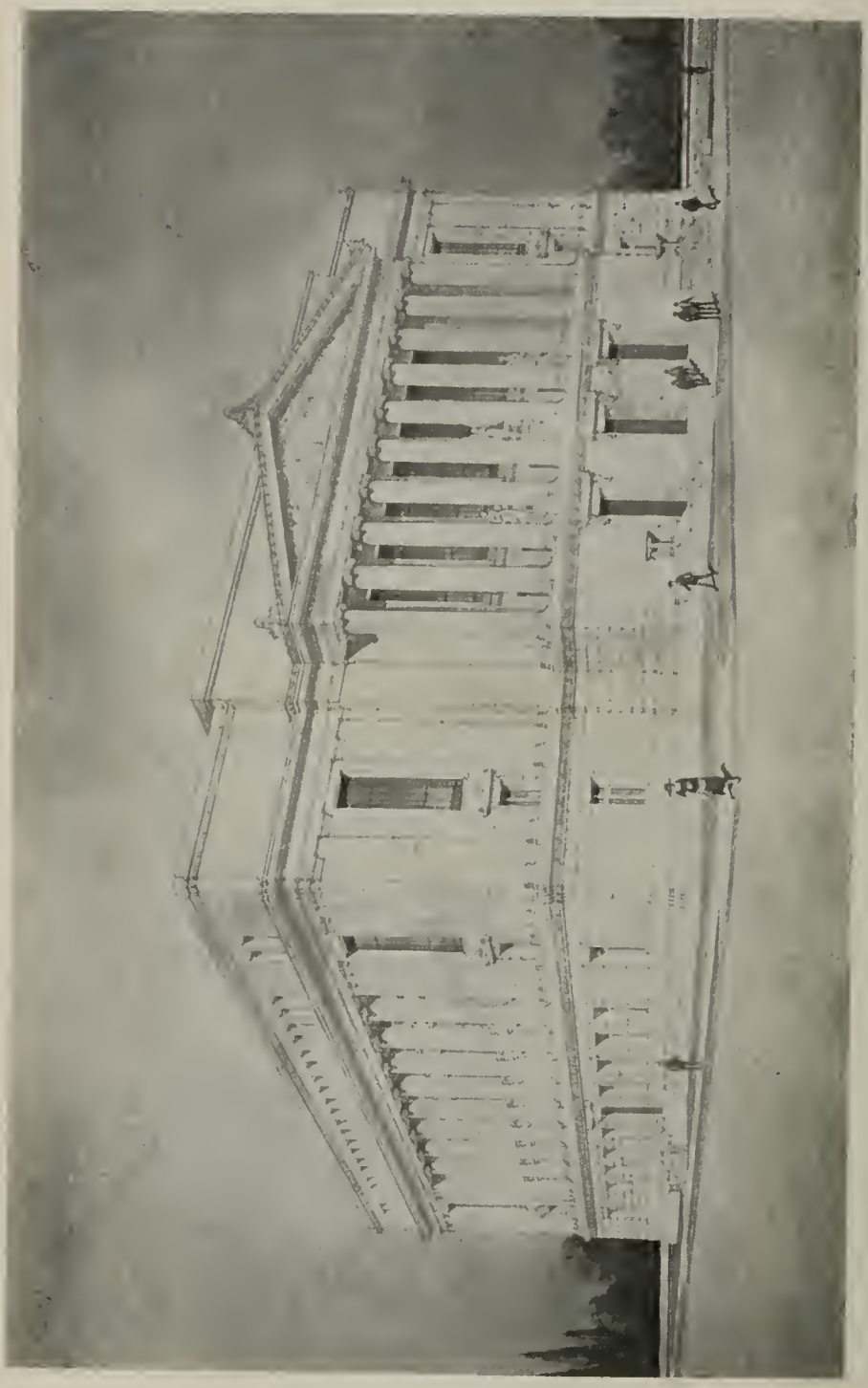
PLAN OF FIRST FLOOR, STATE LIBRARY AND COURTS BUILDING, SACRAMENTO, CALIFORNIA
Weeks & Day, Architects



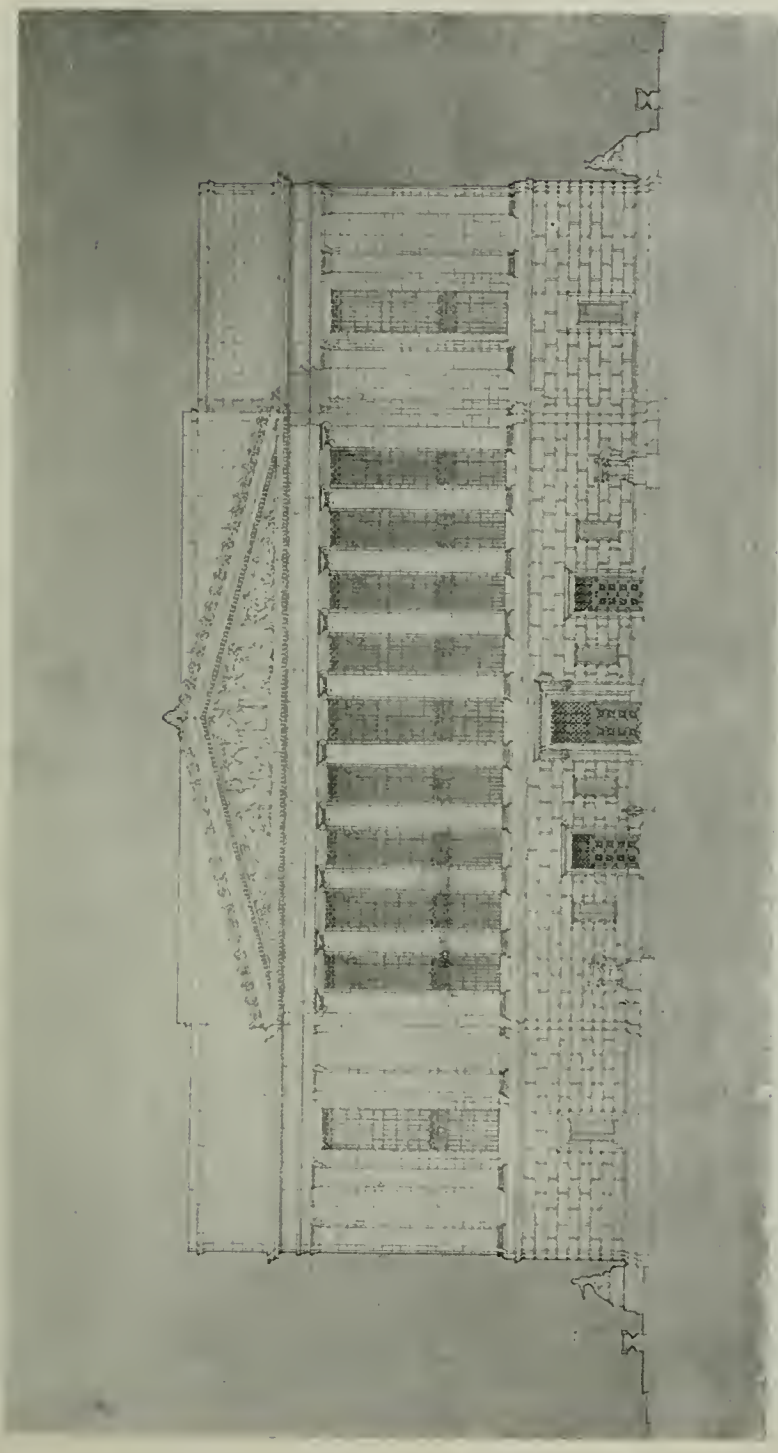
PLAN OF THIRD FLOOR



PLAN OF FIRST FLOOR, STATE OFFICE BUILDING, SACRAMENTO, CALIFORNIA
Weeks & Day, Architects



STATE LIBRARY AND COURTS BUILDING, SACRAMENTO, CALIFORNIA
WEEKS & DAY, ARCHITECTS

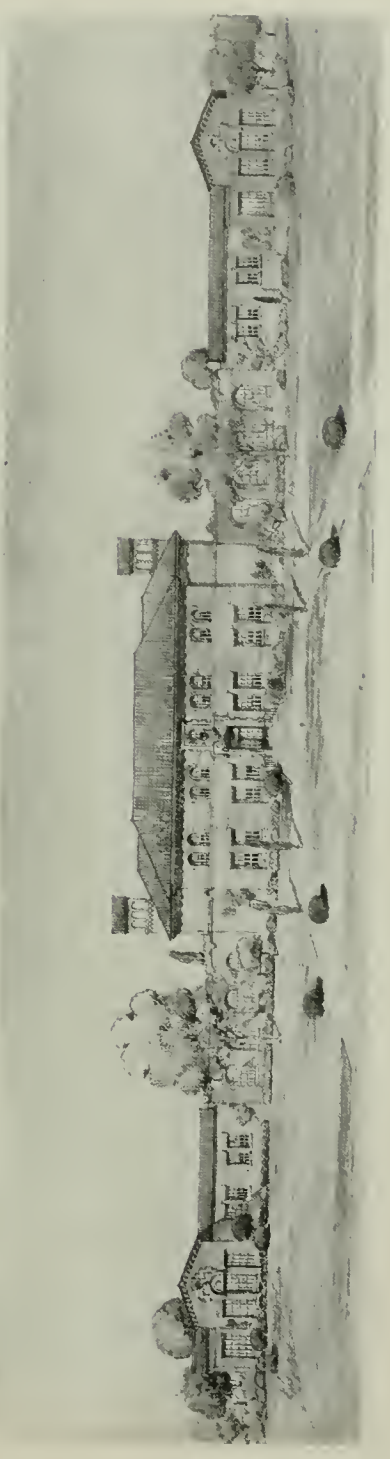


COMPETITION DRAWING, STATE OFFICE BUILDING, SACRAMENTO, CALIFORNIA
WEEKS & DAY, ARCHITECTS

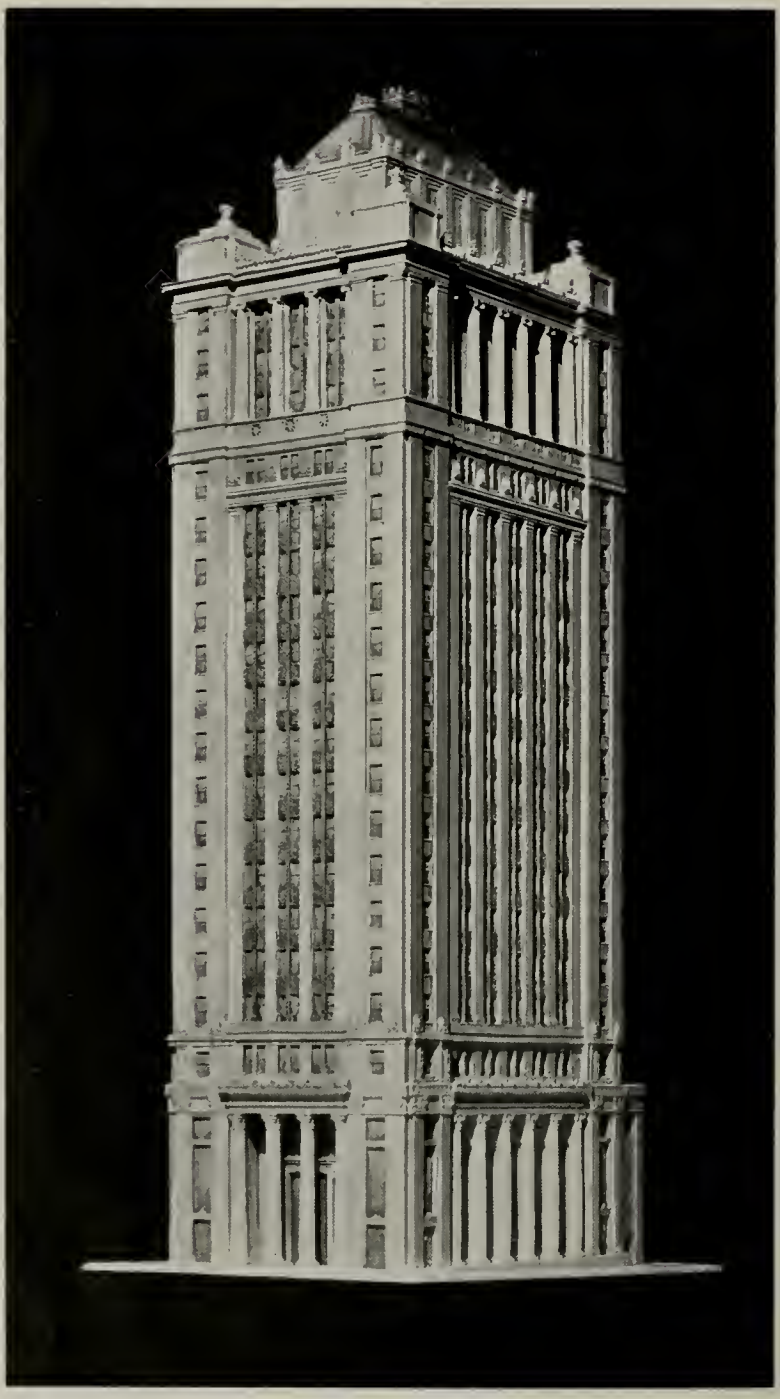
SKETCH MODEL, PEDIMENT OF STATE LIBRARY AND COURTS BUILDING SACRAMENTO, CALIFORNIA

SKETCH MODEL, PEDIMENT OF STATE OFFICE BUILDING, SACRAMENTO
EDWARD FIELD SANFORD, JR., SCULPTOR. WEEKS & DAY, ARCHITECTS

ELEVATION ON TWENTIETH AVENUE



ELEVATION ON NINETEENTH AVENUE, HOSPITAL FOR CRIPPLED CHILDREN, SAN FRANCISCO, CALIFORNIA
WEEKS & DAY, ARCHITECTS

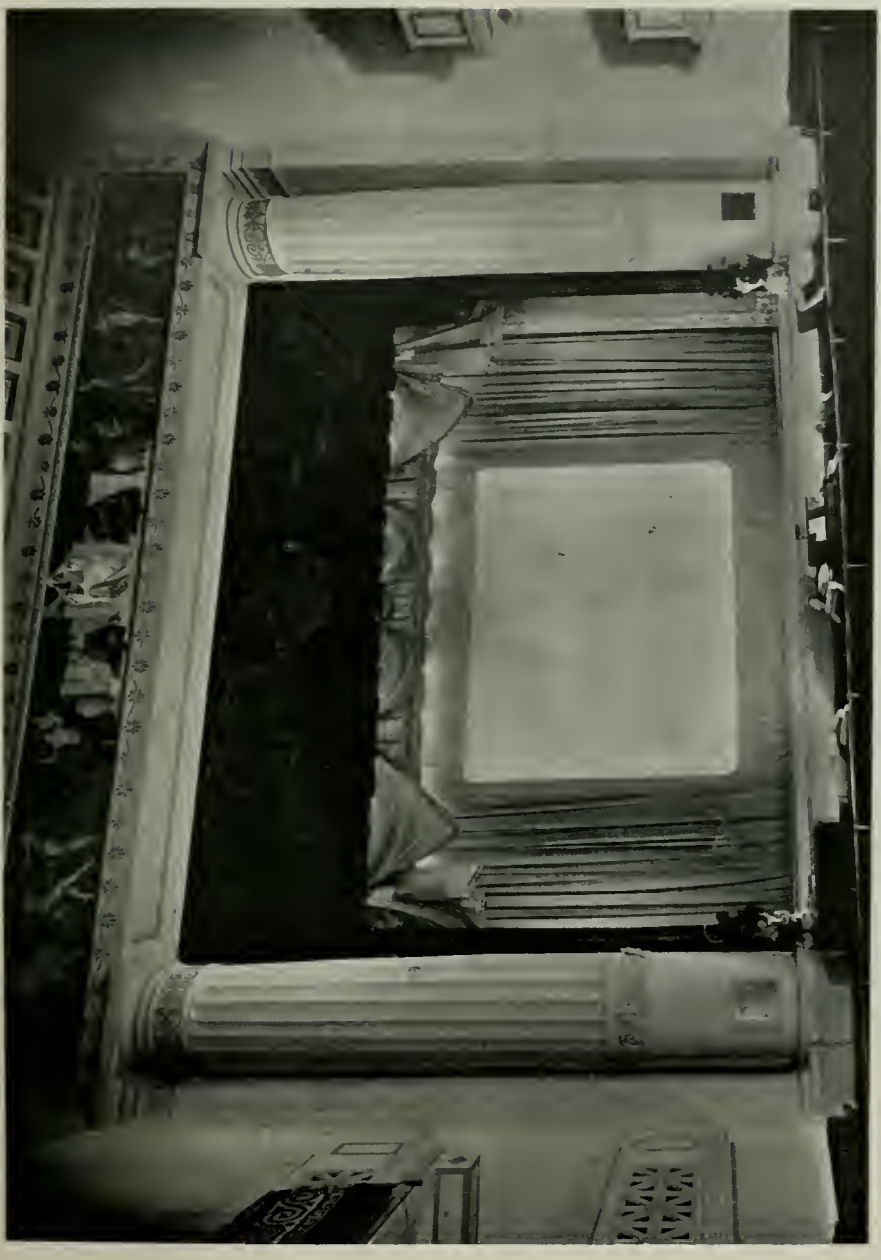


SACRAMENTO-SAN JOAQUIN BANK, SACRAMENTO, CALIFORNIA WEEKS & DAY, ARCHITECTS

SAN FRANCISCO PUBLIC LIBRARY

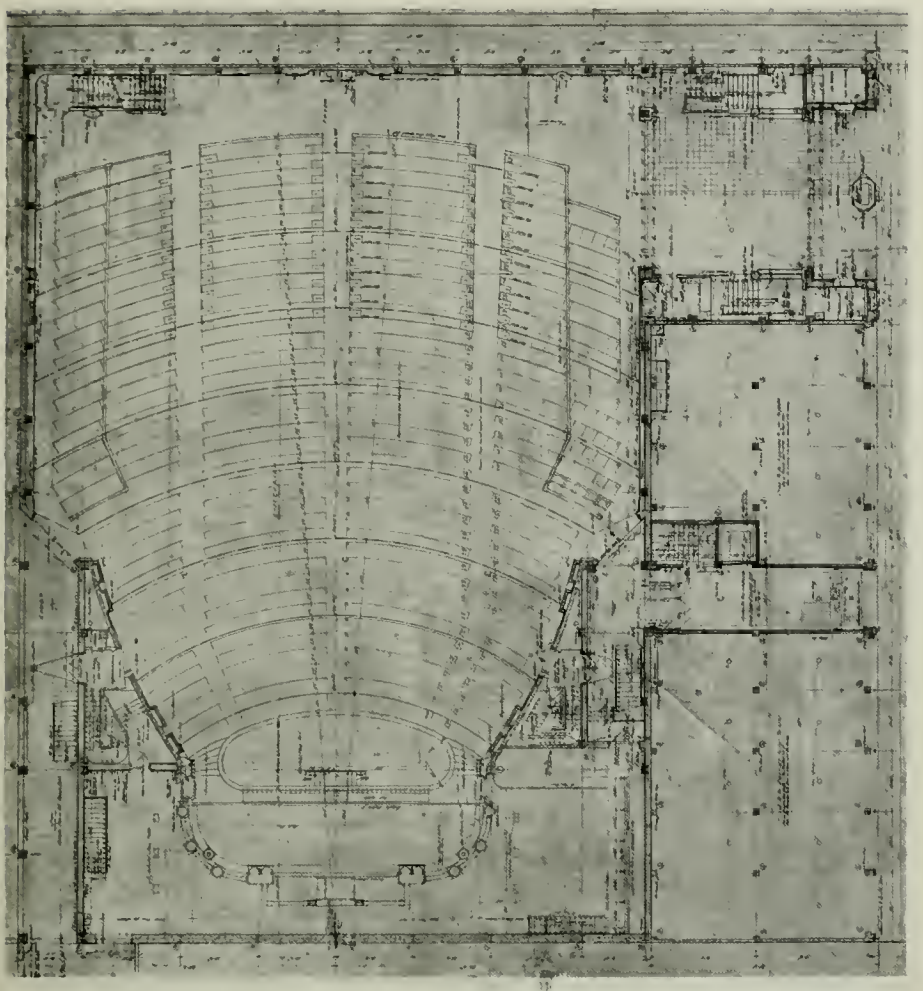
COMPETITION DRAWING FOR THE CHICAGO TRIBUNE BUILDING
WEEKS & DAY ARCHITECTS

PROSCENIUM, LOEW'S STATE THEATER, OAKLAND, CALIFORNIA
WEEKS & DAY, ARCHITECTS

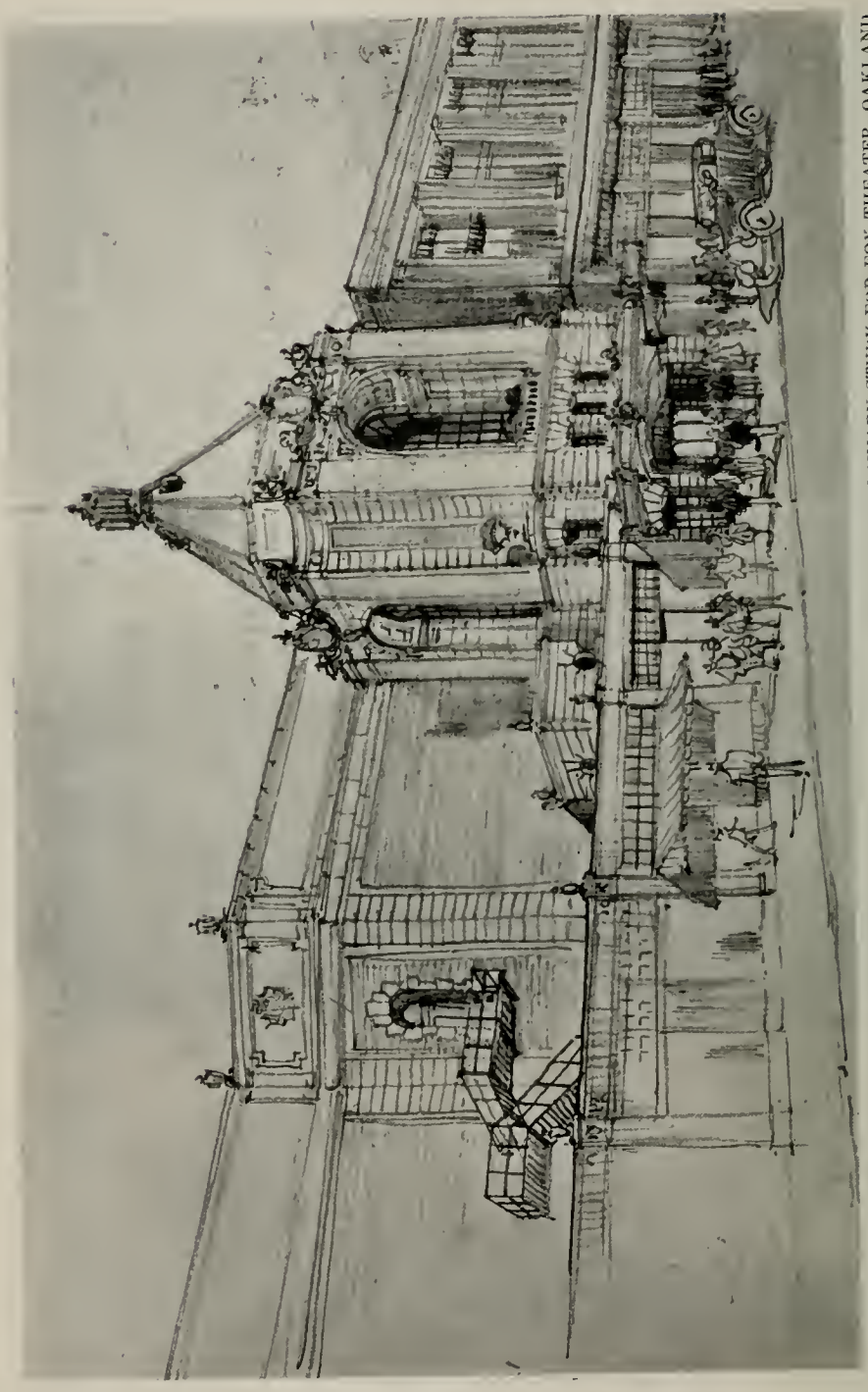


PROSCENIUM, LOEW'S STATE THEATER, OAKLAND, CALIFORNIA
WEEKS & DAY, ARCHITECTS

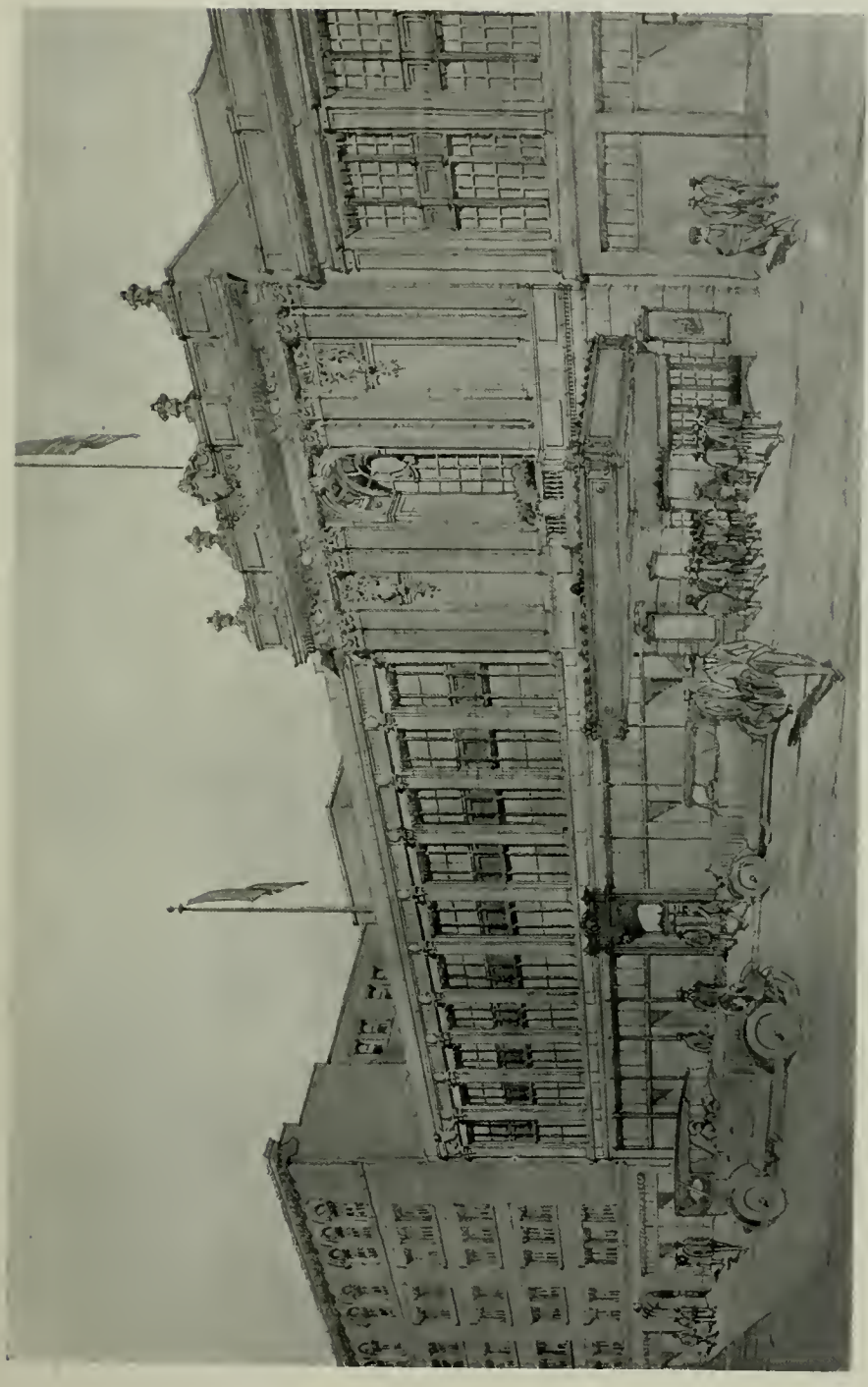
BOXES, LOEW'S STATE THEATER, OAKLAND, CALIFORNIA
WEEKS & DAY ARCHITECTS



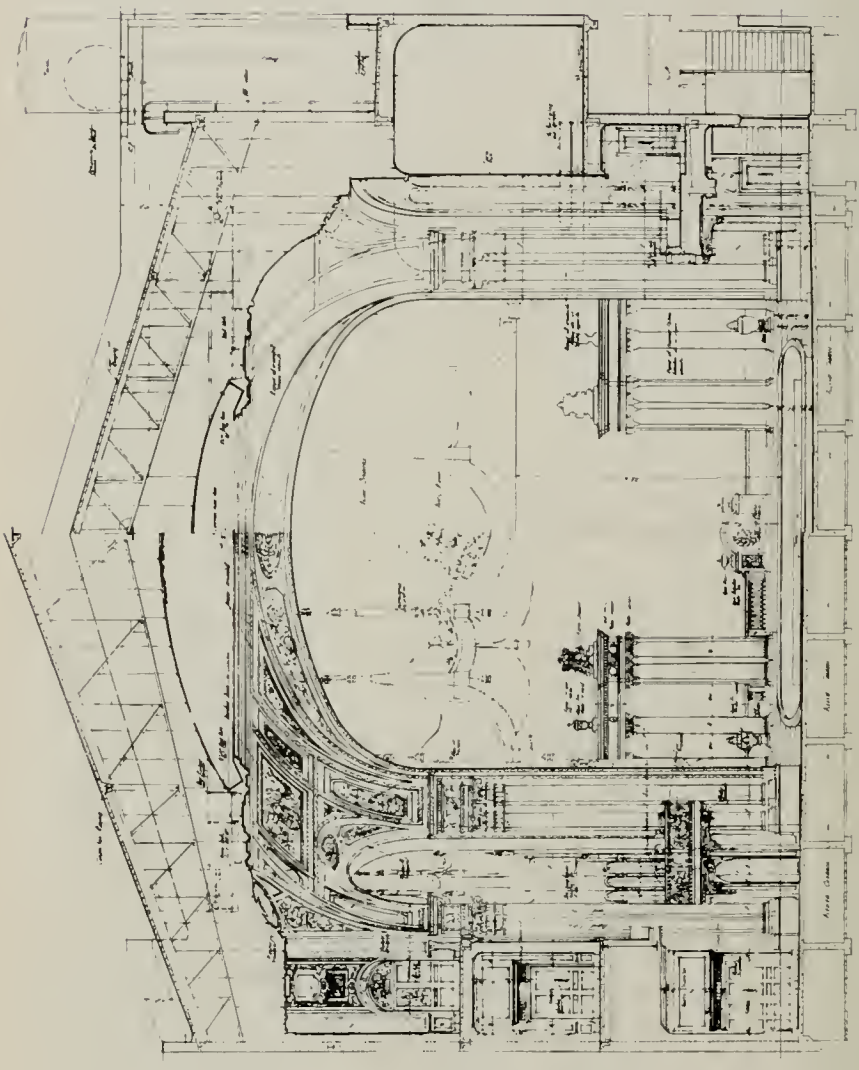
PLAN, FOX THEATER, OAKLAND, CALIFORNIA
WEEKS & DAY ARCHITECTS



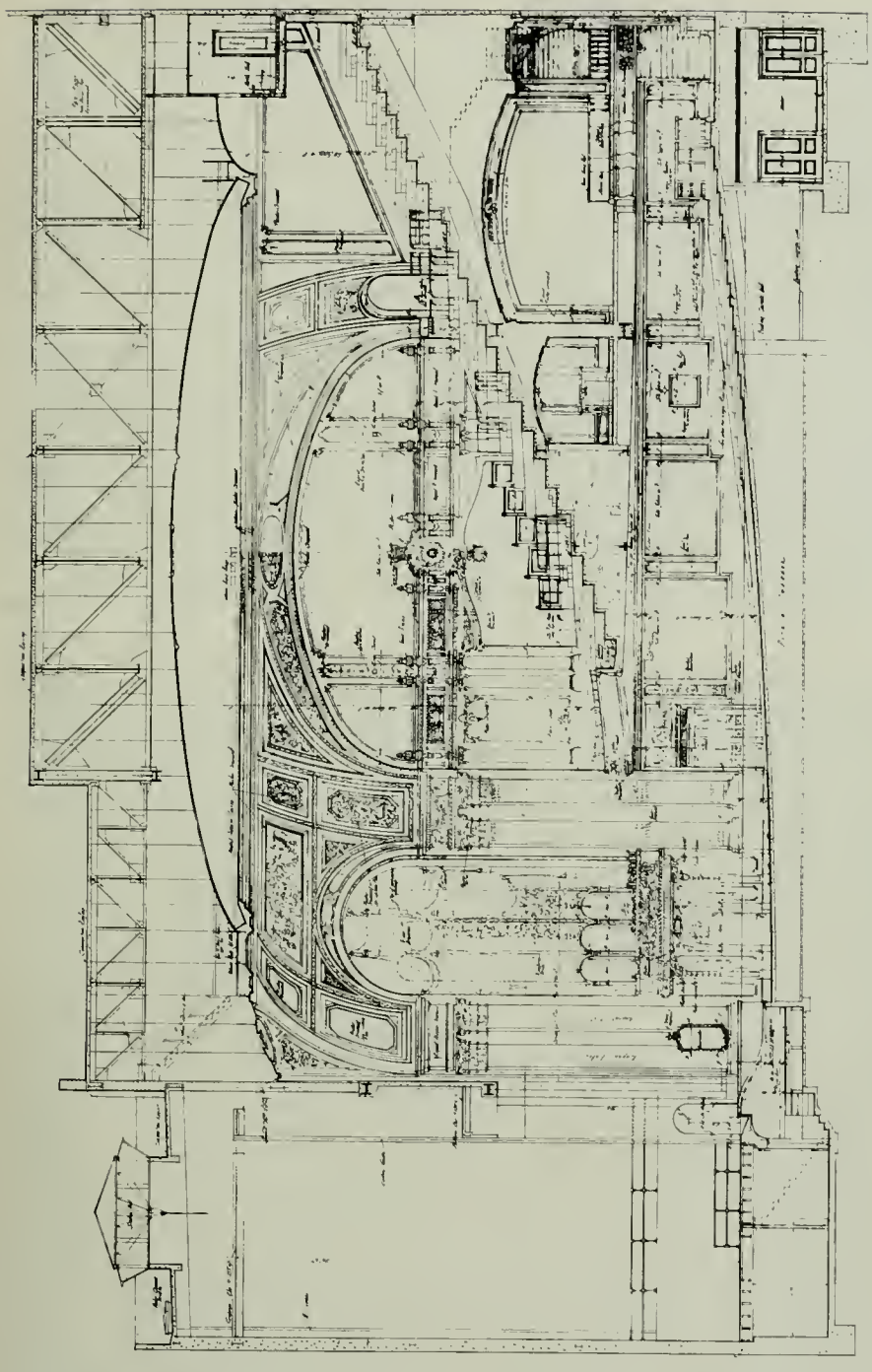
PRELIMINARY STUDY FOR FOX THEATER, OAKLAND, CALIFORNIA
WEEKS & DAY, ARCHITECTS



PERSPECTIVE OF EXECUTED DESIGN, FOX THEATER, OAKLAND, CALIFORNIA
WEEKS & DAY, ARCHITECTS

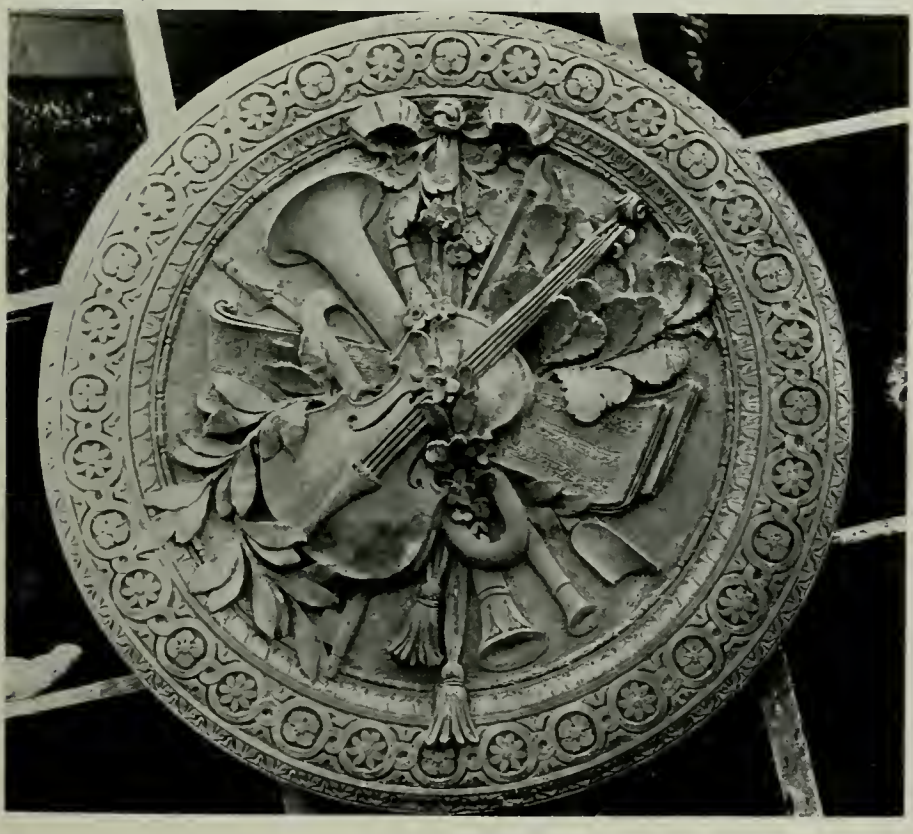


TRANSVERSE SECTION, FOX THEATER, OAKLAND, CALIFORNIA
WEEKS & DAY, ARCHITECTS



LONGITUDINAL SECTION, FOX THEATER, OAKLAND
CALIFORNIA
WEEKS & DAY, ARCHITECTS

ORNAMENTAL DETAILS, FOX THEATER, OAKLAND, CALIFORNIA WEEKS & DAY, ARCHITECTS

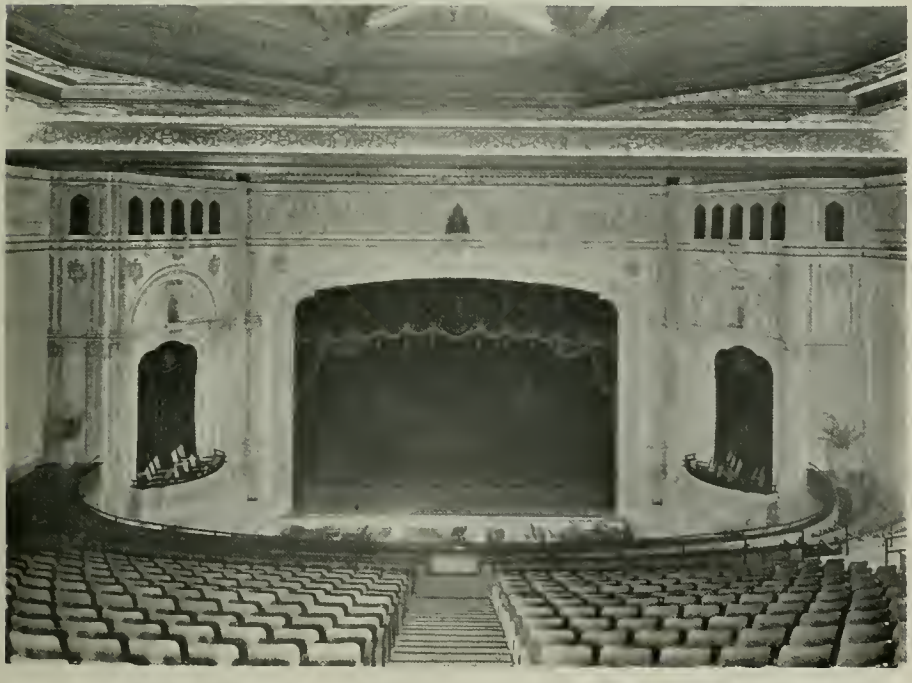


ORNAMENTAL DETAILS, FOX THEATER, OAKLAND, CALIFORNIA WEEKS & DAY, ARCHITECTS

PROSCENIUM AND ORGAN

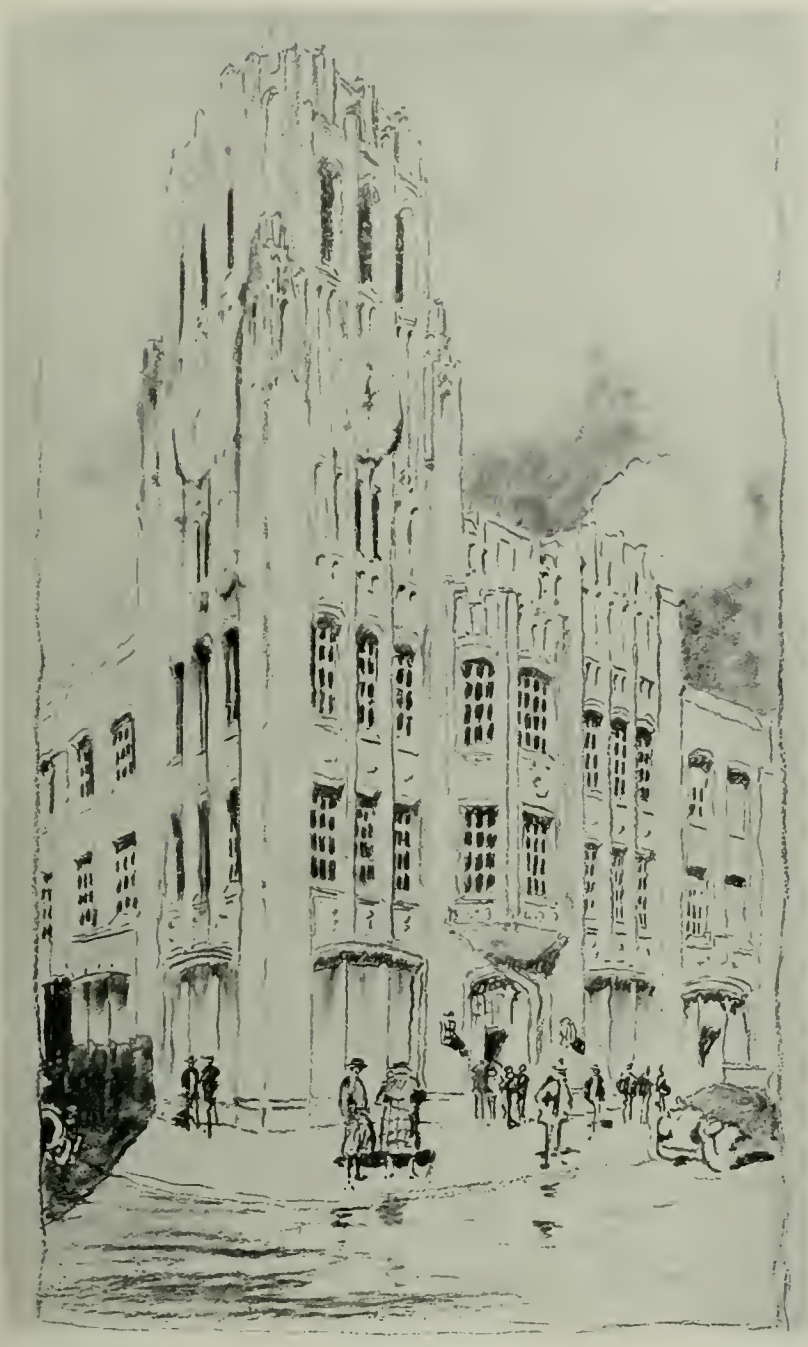
LOUNGE ROOM, HIPPODROME, STOCKTON, CALIFORNIA
Weeks & Day, Architects

AUDITORIUM

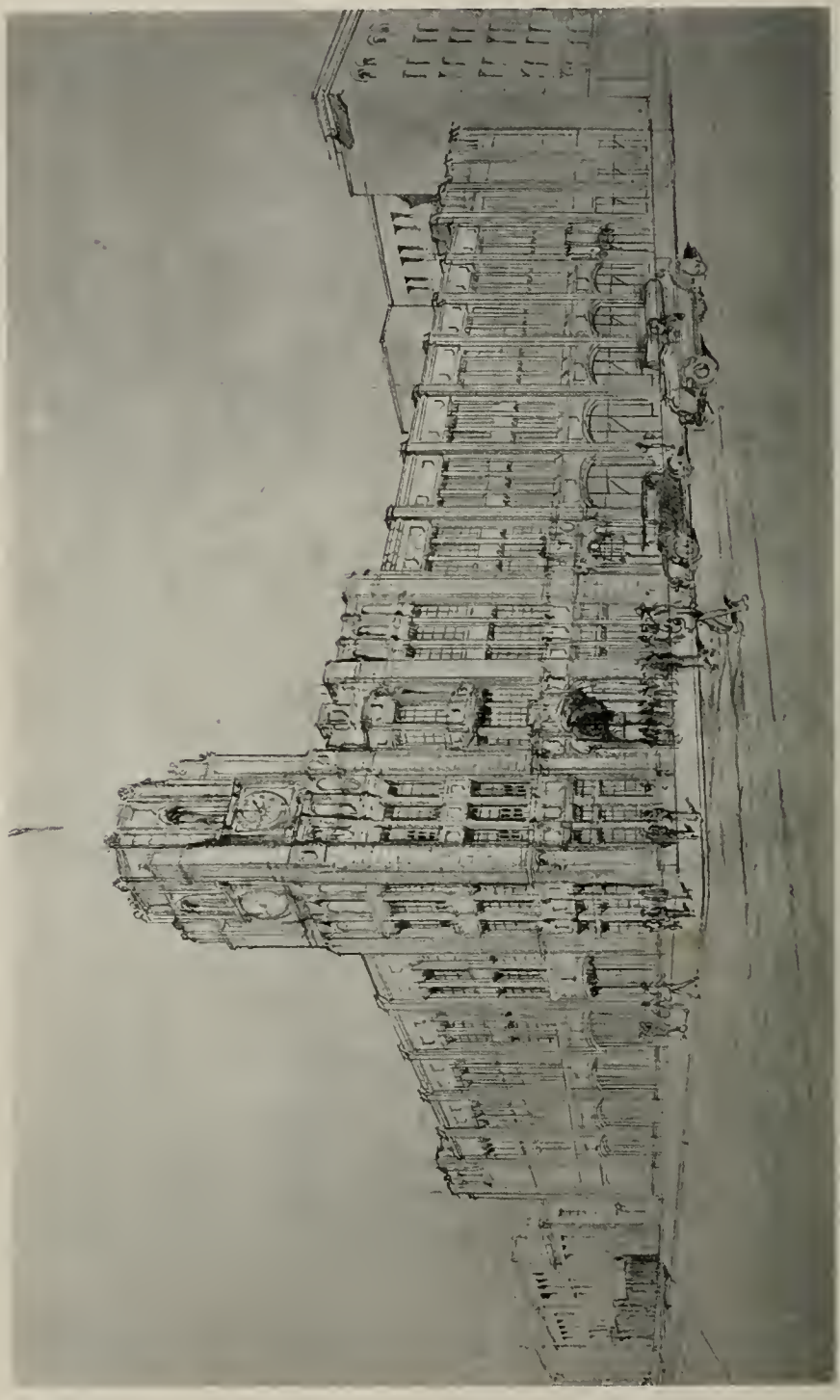


PROSCENIUM, LOEW'S STATE THEATER, LOS ANGELES, CALIFORNIA
Weeks & Day, Architects

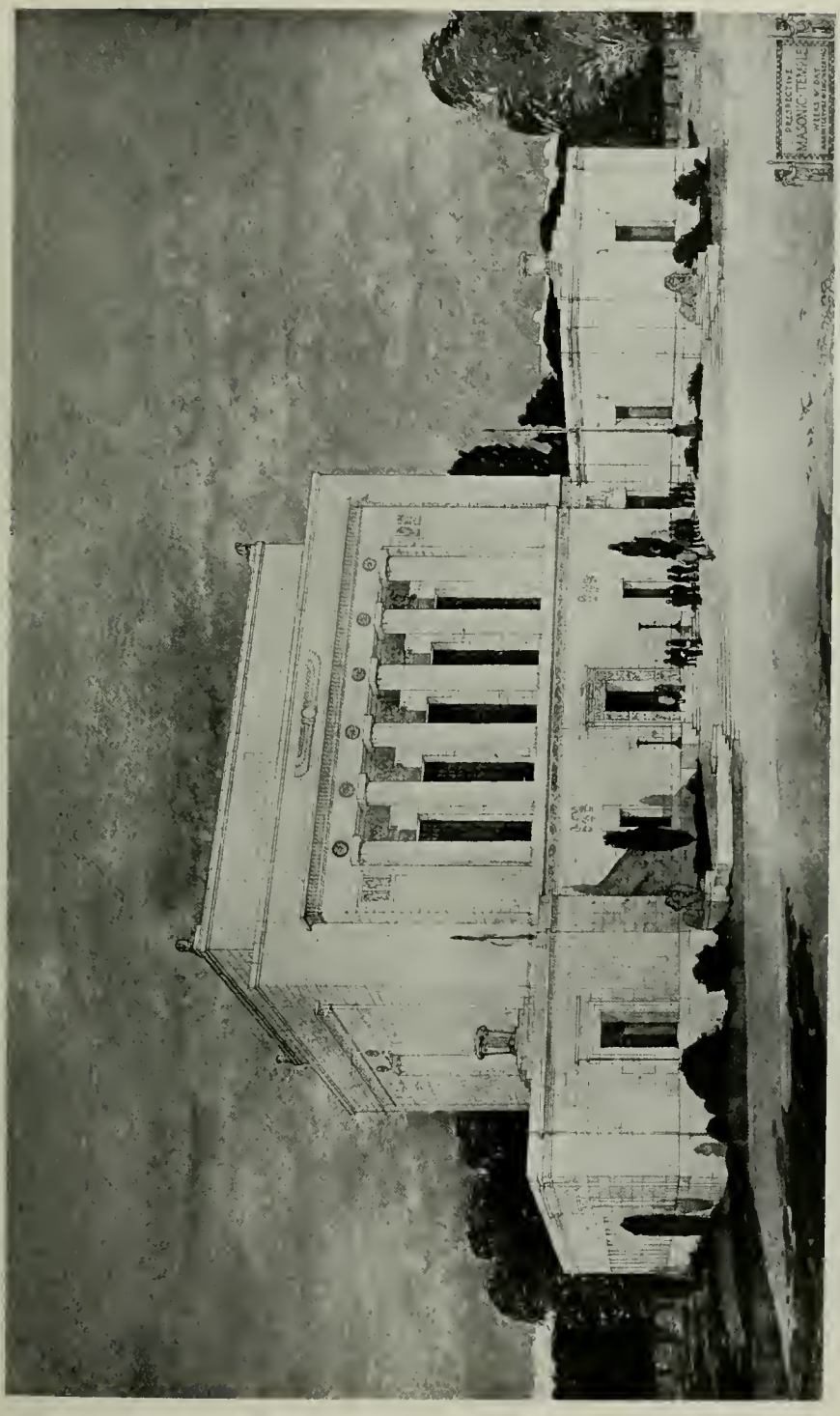
HUNTINGTON APARTMENTS, SAN FRANCISCO
WEEKS & DAY ARCHITECTS



STUDY OF TOWER, BUILDING FOR CHRONICLE PUBLISHING COMPANY, SAN FRANCISCO WEEKS & DAY, ARCHITECTS

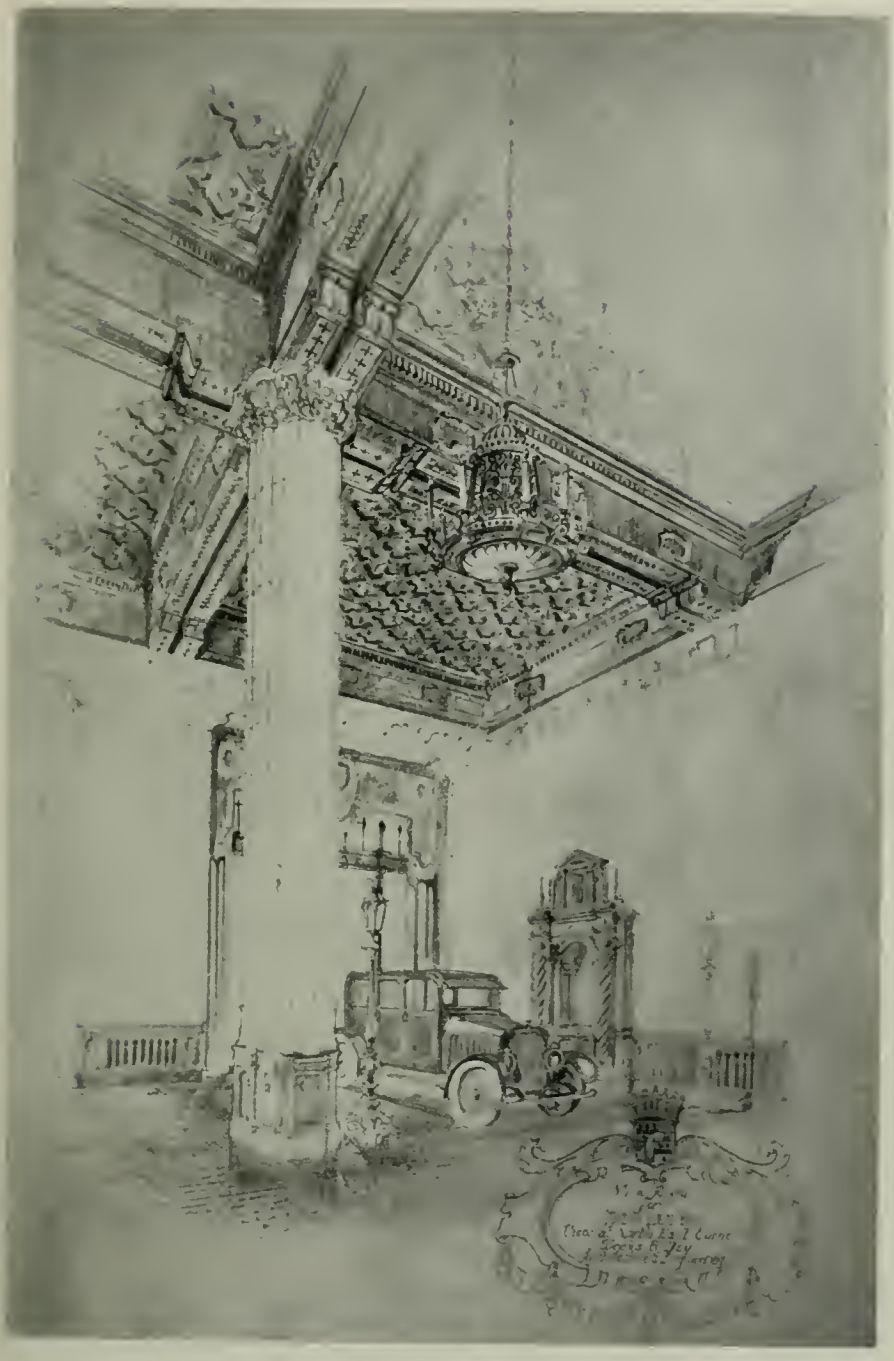


BUILDING FOR CHRONICLE PUBLISHING COMPANY,
SAN FRANCISCO WEEKS & DAY, ARCHITECTS



BUILDING FOR THE CALIFORNIA BODIES OF THE SCOTTISH RITE,
SAN FRANCISCO
WEEKS & DAY, ARCHITECTS

SALES ROOM, DON LEE BUILDING, SAN FRANCISCO
WEEKS & DAY ARCHITECTS



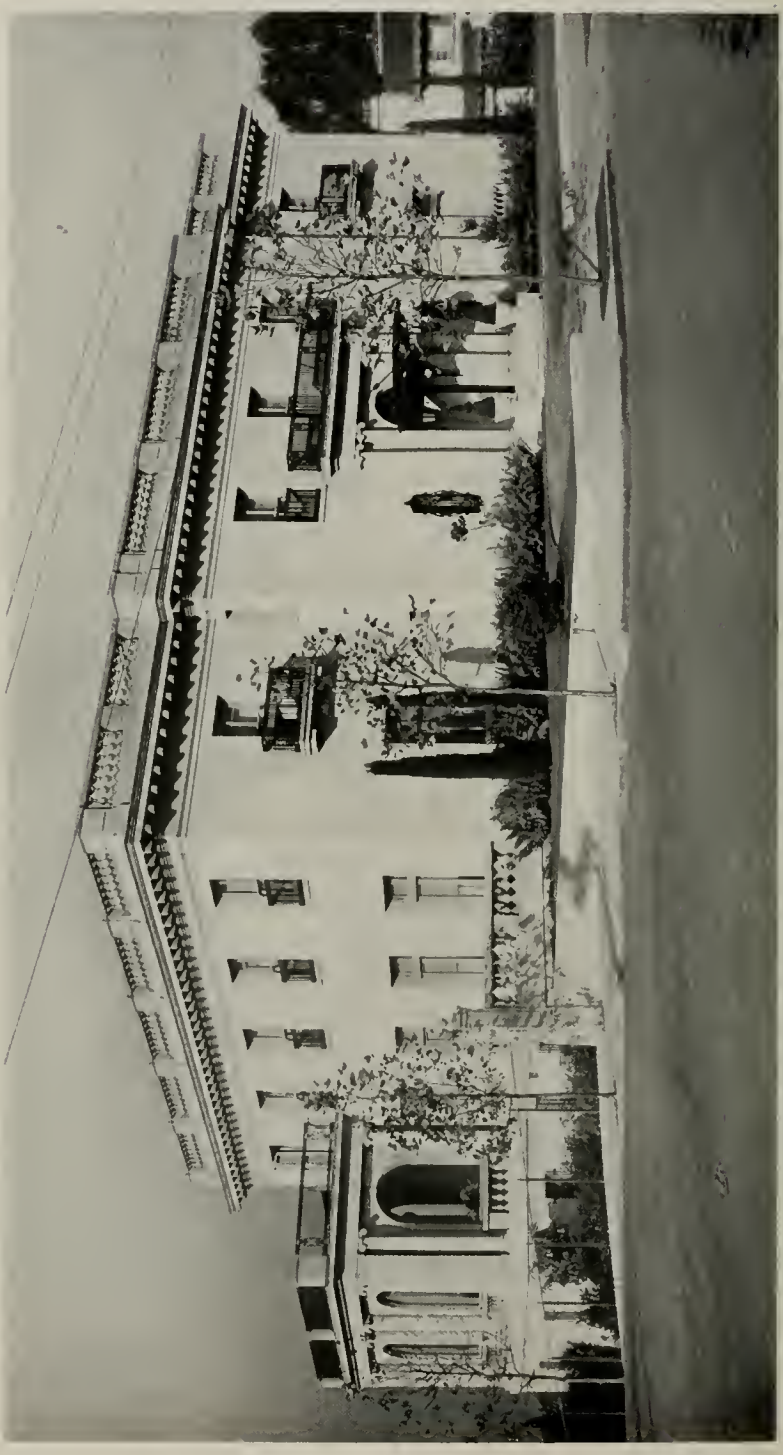
STUDY FOR SALES ROOM, DON LEE BUILDING, SAN FRANCISCO WEEKS & DAY, ARCHITECTS

HOUSE FOR MR. F. W. BRADLEY, SAN FRANCISCO
WEEKS & DAY ARCHITECTS

HOUSE FOR MR. F. W. BRADLEY, SAN FRANCISCO
WEEKS & DAY ARCHITECTS

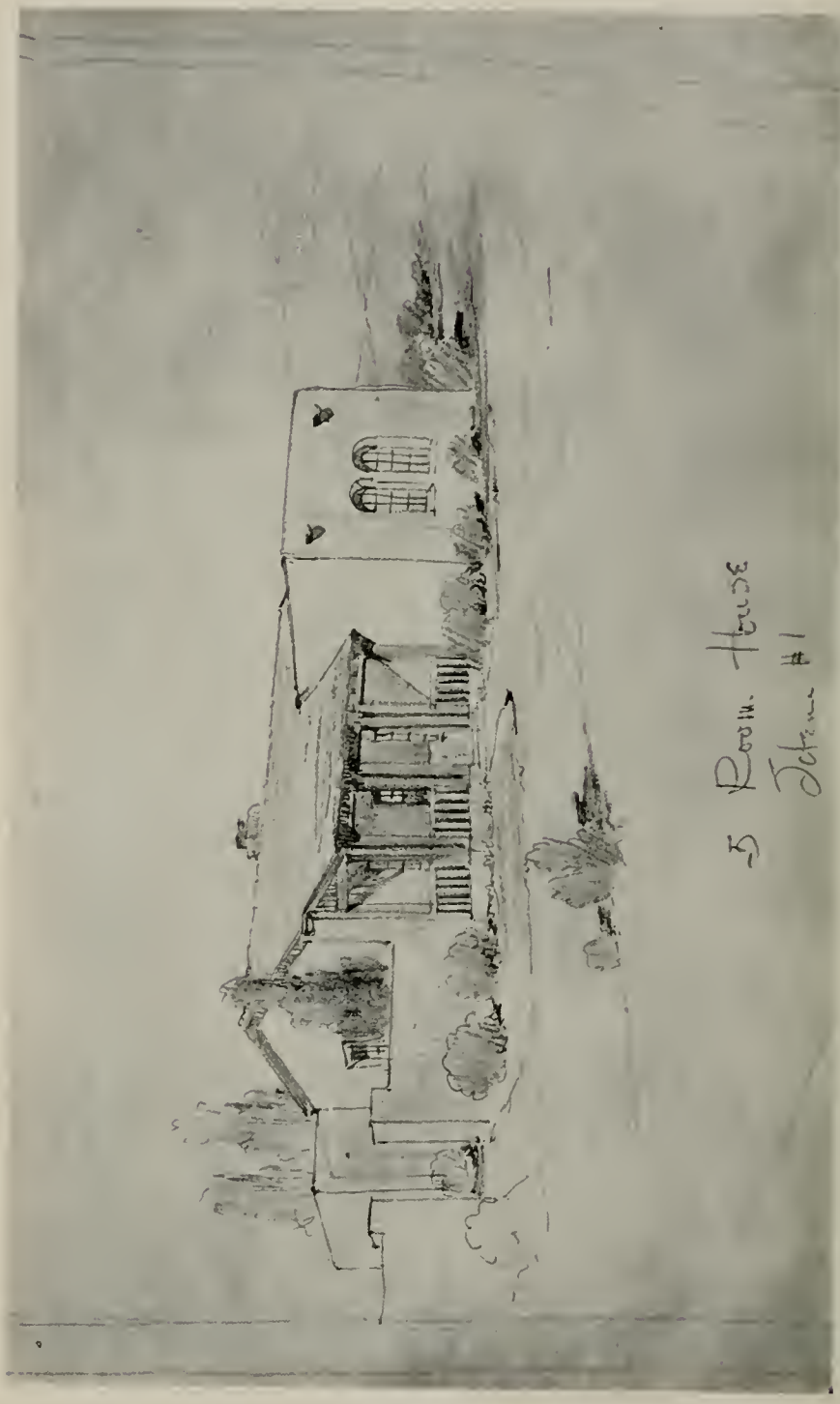
ENTRANCE HALL, HOUSE FOR MR. F. W. BRADLEY,
SAN FRANCISCO WEEKS & DAY, ARCHITECTS

STAIR HALL, HOUSE FOR MR. F. W. BRADLEY.
SAN FRANCISCO WEEKS & DAY, ARCHITECTS



HOUSE FOR MR. EDSON F. ADAMS, PIEDMONT, CALIFORNIA
WEEKS & DAY, ARCHITECTS

HOUSE FOR MARY PHELAN, SAN FRANCISCO
WEEKS & DAY
ARCHITECTS



HOUSING AND PLANT BUILDINGS FOR PACIFIC PORTLAND CEMENT COMPANY, GERLACH, NEVADA
WEEKS & DAY, ARCHITECTS

The Architect as an Illuminating Engineer*

By W. L. STOCKWELL

Illuminating Engineer, San Francisco Division, Pacific Gas and Electric Company.

THE illuminating authorities of today feel that in general the architects are lagging behind in illuminating practice, and as a rule, that they are not providing for sufficient lighting facilities when making up their plans and specifications.

No great blame attaches to them for this as it is recognized that illuminating practice has advanced so fast as to make it rather difficult to keep fully abreast of the art when one has so many other matters demanding attention.

Wiring plans and illuminating layouts that were good practice and entirely satisfactory yesterday, are apt to prove poor practice and very unsatisfactory today, as witness the following instances:

Recent tests conducted by the Post Office Department have shown that by raising the intensity of light used in one of their offices from 3.6 foot-candles to 8 foot-candles there was a gain in labor output to the amount of three dollars for each dollar that was expended in the improvement of the lighting installation.

After sixteen months of careful testing, the Detroit Piston Ring Company of Detroit, Michigan, found that by increasing their light intensity from 1.2 foot-candles to 14 foot-candles their production was increased 25 per cent at a cost to them of an amount approximating but 2 per cent of their payroll.

As a result of these and many other tests and surveys that have been made, engineers estimate that there is lost through poor lighting in the industries, labor output to the value of 20 cents per day per man, a total for the United States as a whole, of two and one-half billion dollars annually.

In the merchandising field also, higher intensities of light are being coined into dollars.

Great material benefits are therefore derived from the use of higher light intensities, evoluting practice ever tending to accentuate possibilities to the full.

When it is realized that daylight intensities measure hundreds and thousands of foot-candles while an average of but 10-foot candles of artificial light is not yet standard practice, some idea may be gained of what the future holds in probabilities.

In addition to intensity in lighting, there must also be considered the factor of quality. To maintain a fixed intensity of light and enhance its quality demands as a rule, an additional expenditure of electric energy, and these two factors, i. e., higher intensity and better quality of light necessitates access to greater electrical energy at the wiring outlet.

Great educational forces are at work bringing these factors to the attention of the general public and it is highly desirable that the architect should lead rather than follow this trend.

It might interest you to know that right here in our own State, there has been installed by one mercantile firm, lighting intensities in its show windows comparable to broad daylight. Some two thousand foot-candles in fact, or putting it another way, their installation calls for approximately 200 watts of electrical energy demand per square foot of area of the window floor.

* Paper read before the San Francisco Architectural Club, June 6, 1923.

Among other advantages derived from this installation may be mentioned the overcoming of specular reflection in the plate glass front making it possible for the observer to gaze at the window display without suffering annoyance from reflected images of the street, opposite buildings, etc. To anyone who is familiar with the objectionable nature of specular reflection in display windows this result alone would seem to justify the expense of installation and maintenance.

For the purpose of engineering a lighting installation, a very simple formula has been found adequate, to wit: The square feet of floor area multiplied by the desired foot-candle intensity, divided by the coefficient of utilization, the result being expressed in lumens, or units of light flux emitted by the light source. All standard lamps are now rated in lumen output.

This application of the formula determines the size of the lamp necessary to produce a given foot-candle intensity. Per contra, by multiplying the lumen output of a lamp by the coefficient of utilization and dividing by the area in square feet, you arrive at the foot-candle intensity that will be available.

For your information there has been prepared in the form or a bulletin which may be had for the asking, a simple chart and set of tables that will enable you to tell almost at a glance, what the coefficient of utilization will be for almost any combination of luminaire, mounting height, dimension of room, and color of walls and ceiling. Supplementing this there is available and furnished free by the State of California and various National authorities, tables of recommended intensities covering different kinds of buildings and occupations.

Permit me then to visualize the architect functioning efficiently as an illuminating engineer. He first turns to his table of recommended intensities, then knowing the dimensions of the room and the color of the walls and ceiling and having at least an approximate idea as to the type of luminaire to be used, he turns again to his table and secures the coefficient of utilization, applies the simple formula aforementioned and accurately ascertains the necessary wattage.

When it is appreciated that one watt per square foot, for instance, will produce either, ½ foot-candle or 7 foot-candles, depending upon the conditions involved, the necessity for an accurate method of estimation is apparent. That there is a real need on the part of the architect for exercising more advanced and accurate methods of planning illumination, can best be illustrated by some recent personal experiences in this city.

Instance A is that of a fine new building completed about three years ago, occupied by a furniture store. The proprietor has come to realize that greater quantity and better quality of light would make his merchandise more attractive and hence more salable. Six foot-candles is the minimum recommended for furniture stores. The wiring in this instance allowing 1200 watts per circuit, and using a luminaire with the highest coefficient of utilization, it was only possible to obtain an initial intensity of five foot-candles with no allowance whatever for inevitable depreciation due to dust, etc. As the proprietor desires to use more than the minimum quantity of light and a better quality than he now has, it will be necessary to install additional circuits in exposed conduit,—which method as you know, has its objectionable features.

Instance B is that of a downtown office building now under construction in which the owner desires to install a good quality of semi-indirect lighting, utilizing his proposed wiring capacity to the full he will be able to obtain an intensity of but three foot-candles while the recommended minimum intensity for offices is from five to ten foot-candles with greater intensities used to advantage in a large number of cases.

Instances such as these can be cited without end, so that when the cry goes forth for more and better light and the illuminating engineer is called on the job, lack of sufficient wire capacity is most generally found to be the obstacle that bars the way to service.

In conclusion, I wish to say that if you are not now familiar with the formula and methods that I have outlined, I earnestly urge you to learn, adopt, and practice them and to that end my personal service and such information as I have at hand are at your disposal.

* * * *

All Buildings a Matter of Public Concern

Mr. W. H. Tusler, a Minneapolis architect, and chairman of the publicity committee of the Minneapolis chapter, American Institute of Architects, recently gave expression to the following, anent public concern in good architecture:

"Every building that is constructed is a public matter and as all buildings are seen, society has a right to demand that none be ugly.

"The building department of any city requires that no buildings be unsafe or dangerous to health; economy requires that they be not wasteful of space or ill suited to the purpose for which they are created. The investor realizes a well designed building is a better investment and a well constructed building is a more economical investment.

"All building undertakings are better, more valuable, if they are beautiful. Bad planning, waste space, poor means of circulation, fire hazards, usually result in loss of income, higher percentages of taxes to income and increased insurance rates.

"The average client is unequipped to design or direct the construction of his building. His attempt to do so is as certain to court disaster as would be his untrained efforts to supplant his physician for his own cure.

"The practice of architecture requires business executive ability of a high order. Inasmuch as the owner's financial interests are deeply involved in the architect's action, the integrity of the latter must be above question. The development of a well equipped architect demands long and careful study and preparation."

* * * *

Stucco Should Always be Painted

Whenever stucco is used it should be painted whether on lath or masonry, says a writer in the Washington State Architect. In the best of stucco work there are hair cracks through which moisture can find its way. In cold weather this moisture freezes and gradually expands and forces the stucco out. Sooner or later large cracks will appear. All of this may be avoided by using two or three heavy coats of concrete paint. The paint fills up the minute cracks and prevents moisture from entering. The appearance of the stucco is very much improved also by the introduction of some color in the paint.

The Architect's Wife

WOMAN, after suffering through many ages the weight of unequal law and the disabilities—political, social and industrial—thrust upon her by man, conscious of his real inferiority, and, at the same time, determined to keep his place in the sun, has at last attained her rightful position.

We meet her in that male holy of holies, the smoking carriage; her clubs threaten to outnumber man's; she sits in Parliament, and no politician can be regardless of the necessity of obtaining her vote. As she outnumbers man she can outvote him, and as the majority rules she rules, even if her abilities would not enable her to do what she wished were she in a minority.

She has attained the freedom of the professions, but should she elect instead of pull the strings, man is bound to work her will or to suffer social and economic extinction. It is a sign of a new epoch that this should be the first article in our columns on the subject of the architect's wife.

For architects are human beings and therefore gregarious, and though architectural misanthropes exist, the majority of the fraternity marry, if their clients' commissions make it a possibility, and 6 per cent affords a living wage.

But in marrying they gamble on an issue in which the dice are loaded against them, for, though the architectural press can criticise their achievements weekly, the architect's wife can criticise her husband's work daily, and can possibly even remind him of his shortcomings from rosy dawn to dewy eve.

And, whereas the architectural press is often wrong in its criticisms, it is demonstrable that the architect's wife is always right in hers.

And, whereas the architectural press cannot deal with personal matters, the architect's wife can, and often does. She may inspect her husband's buildings, which, unfortunately for his peace of mind, she can see, but in doing so she sees clearly the ideal opportunity he has missed, and as it is only kindness to say what she means, she frequently does so. If her criticisms are expressed in general terms they are for that reason harder to rebut, while if she descends to detail it is to convince her husband that he has done the right thing in the wrong place or the wrong thing in any place.

But, apart from criticism of his work, the architect's wife, from information gathered from unwary remarks, may criticise his dealings with his clients, and her views on professional diplomacy are frequently original and quite unanswerable. If he has encountered trouble in dealing with his client, being a woman, her motherly instincts enable her to indicate to him what childish mistakes in tact, diplomacy, or skill have been his.

From the summit of her intuitive knowledge she is forced to condemn his feeble achievements, if she is honest. She may like a good comrade—as she is—encourage him to try to conceal his delinquencies from a male client, but she has a fellow-feeling for the client's wife, and her sympathy with her husband is checked by her sense of justice.

If he builds factories he may escape serious criticism, for factories are uninteresting to her; if he builds churches she will only generally state her preferences for Norman if he has designed a Perpendicular church; but if his practice lies in the direction of domestic architecture

his work from Alpha to Omega is open to her searching criticism. Every room on every side, except a kitchen, must face south (in England), and every room must contain cupboards contrived to hold everything needed, without the sacrifice of any space, while domestic arrangements should be contrived to practically eliminate service. Other more complicated and difficult requirements should be met, but what we have mentioned are the universal preliminary demands of Woman.

Here we may remark that the strength of her position is both revealed and proved. For it is admitted by critics that English domestic architecture is better than that of any other country, while, at the same time, it is an axiom that the Englishwoman has had in the past a greater measure of freedom than women elsewhere.

Here surely is the unfailing sequence of cause and effect, and, instead of attributing the Renaissance of English domestic architecture to Norman Shaw or other well-known architects, we should look further and attribute it to the feminine power which is behind all our efforts. And, though we feel this power round us, is not the very point and apex of the influence the architect's wife, who is in the best of all positions for driving it home?

If we have proved our case, and we believe we have, should not the Royal Institute of British Architects ask His Majesty to award the Gold Medal not to an architect, who is but the instrument with which the work is done, but to the architect's wife, who controls the machine? It is true that, like the Jesuit of fiction, woman may be content to work undisclosed behind the shifting scenery of our little lives. But does it become us if we love truth to consent to the hiding of scientific facts? Let us render honor to those to whom honor is due, and give our medals to the controllers of our efforts.

This may seem to be the resource of the beaten, who, when their citadel is collapsing, hoist the white flag and endeavor to arrange terms, but, though we fully realize that the woman architect may eliminate all of us—as she has begun to do at the Architectural Association—we prefer to put it as an honest tribute to our recognition of facts which have been brought home to us by events.

We ourselves being, as "The Architect," representative of neither sex, but of all those who practice the mistress art, may calmly look forward to the day when most of our readers will be women only, bearing in mind that when that day comes, it will need every resource of editorial skill to make our contents worthy to appeal to a more subtle and keen intelligence than is possessed by the average architect of today.—British Architect.

* * * *

Speculative Builder to Blame for High Wage Rates

According to the Wall Street Journal, the speculative builder, who has come into prominence since the present housing shortage became effective, is very largely responsible for the "snowballing" of building workers' wages. Legitimate contractors are forced to meet the wages paid by these speculators in order to hold their men. The Journal believes that the banks might assist in the way of keeping wages from going still higher if they would insert a clause in their contracts specifying that wages paid on the piece of construction, for which the loans was made, be at no more than the union scale.

Oldest Sawn Shingle in California

THE oldest sawn shingle in California has been found. It was 74 years old and came from an adobe dwelling, erected by the Arrellanes family in 1849 on the Guadalupe Rancho, near Santa Maria in Santa Barbara county. The building originally had a thatched roof of tule, but this was burned by General Fremont's soldiers, and then replaced by redwood sawn shingles.

This relic of the "Days of Gold" was submitted by Mr. W. L. Smith, manager of the Pacific Coast Coal Company of Santa Maria, who was awarded first prize in the state-wide contest conducted by Mr. Gus Russell of the Santa Fe Lumber Company. The contest grew out of the fight to "save the shingle" at the election last November. Mr. A. D. McKinnon, proprietor of the McKinnon Lumber Yard of Hollister, won second prize. He sent in a redwood shingle from the McMahon home in San Juan, San Benito county. The house was built in 1852.

Many other very old redwood shingles were in competition. Among these was one from the house of General Mariano G. Vallejo in Sonoma. It had been doing duty since 1836; but was disqualified by the judges because it was a split shingle.

The shingle stands for something significant in California. The first roofs built by the Argonauts were of shakes—thin split boards made by driving a wedge through a log. Many examples of shake roofs may still be found in the mountains of California. Shakes were always made on the premises. Sawn shingles did not appear until a more permanent civilization came, so sawn shingles mark the beginning of community life in California. Sawn shingles were tangible evidence that the rough, shifting social bases of Pioneer times had become stabilized.

The latest volume issued by the California Historical Society containes "The Chronicles of George C. Yount." Yount was a pioneer of 1826. Under date of 1833 is this story:

"From Benicia, Yount proceeded to Petaluma, and the Missions of San Rafael and Sonoma. The padre of the two missions, recognizing Yount's all-around frontier ingenuity, hired him to make some needed repairs on the buildings. Mrs. Watson says that Yount was the first person to make shingles in Alta, California."

And we are referred to a manuscript in the Bancroft library which contains the following:

"I made arrangements with Geo. Yount to manufacture shingles to shingle Vallejo's house in Sonoma.

"The shingles had to be made in the most primitive manner as we had no machinery. The tree was felled, barked, cross cut off in blocks of 18 inches long, then split and shaved. With all those difficulties Yount and myself used to make about 1000 shingles a day each, and I have seen men make as many as 1500. Those shingles we made were the first that had been seen in the country."

* * * *

"The Happy Age Before Architects"

The Roman sage Seneca denounced the building of houses with several stories that were beginning to appear on the Palatine hill in these words: "These towering tenements are dangerous to the persons who dwell in them." If Seneca had lived to see the modern 30-story skyscraper the Latin language probably would not have been sufficient to express his emotions.

Fifty-Sixth Convention of American Institute of Architects

MR. W. B. FAVILLE of San Francisco was re-elected president of the American Institute of Architects at the 56th convention held at Washington, D. C., May 16-18.

According to the report of the secretary, membership of the Institute on May 16, 1923, was 2,714, an increase of 230 during the year. Recorded deaths during the year were fifteen in number as follows: Fellows, James W. McLaughlin, George Beaumont, Leoni Robinson; Members, George Edwin Barton, George E. Parsons, T. E. Billquist, Frank A. Stearns, Curtis W. Bixby, William H. Walker, Frank M. Duke, Thomas B. Wolfe, Dudley McGrath, Ernest Woodyat; Honorary Member, James Bryce; Honorary Corresponding Member, Enrique Ma Repulles y Vargas. A Chapter was added in West Virginia.

Regional distribution of Chapters is having a trial, the object being rather to ascertain whether regional assignment of directors will induce better co-operation than the old form of election by the convention as a whole. The success of a regional meeting at Charleston, at which representatives of four chapters conferred with the Institute Executive Committee, suggested that each director canvass his district promptly with a view of calling a similar conference.

Education, the program for which is most comprehensive of all Institute activities, is being steadily and consistently advanced through the energetic labors of this most capable committee. The board recorded its appreciation of these labors, including also the authors of the Institute press book, "Significance of the Fine Arts." The board also highly commended the missionary work of Mr. C. Howard Walker, F. A. I. A., whose tour last year was nanced by the Waid Education Fund. Ten thousand copies of the Public Information circular, "Functions of the Architect," have been sold since its appearance two months ago.

The board called attention to the fact that while the work of the Small House Bureau is placed on a business basis, the Bureau is regarded primarily as contributing to the improvement of small house architecture, and therefore has a definite claim upon all Institute members for support.

Jurisdictional awards were discussed at length. Following the instructions of the fifty-fifth convention, a questionnaire was sent to the chapters seeking information regarding conditions. Only seventeen of the fifty-two chapters replied and these gave no aid to the solution of the jurisdictional award problem. Conditions varied greatly. The sentiment seemed to favor continued co-operation with the Board of Jurisdictional Awards and though it is too soon to appraise ultimate results, it was stated that they should not be jeopardized by any disturbance of the plan.

Discussing the report of the Committee on Contracts, the board, while hesitating to suggest any disruption of the steadily growing use of the Institute's standard form, saw a necessity for joining in action of the Joint Committee called by the Secretary of Commerce. The rock upon which general agreement was split was the general arbitration of Architect's and Engineer's decisions. The new form is not essentially different from the Institute standard form and a change might be advisable in the interest of standardization.

The second session, devoted to educational discussion, was presided over by Mr. R. Clipston Sturgis, of Boston. Professor Charles Sears

Baldwin, of Columbia University, and Professor Herbert M. Langfield, of Harvard, both spoke. McGregor Jenkins, editor of the Atlantic Monthly, followed with an address of exceptional interest. A man of practical ideas and knowledge, his address reached the human side of every one of his large audience.

The evening session was devoted to an illustrated address by Mr. C. Howard Walker on "Tendencies of American Architecture."

Mr. A. C. Bruce, of Atlanta, Georgia, was presented to the convention, an honor conferred upon him, as, since the recent death of Mr. J. W. McLaughlin, he is the oldest in years and longest in membership in the Institute. He is eighty-eight years old, a member of the Institute since 1873 and a Fellow since 1889.

The report of the finances of the Institute Press presented by the treasurer showed an income of $45,867 and expenditures of $43,391. The pleasant announcement was made that the Allied Architects of California had presented the Institute with $5,000 with which to refurnish the drawing-room of the Octagon House, in testimony of the affection in which the Institute is held by its members in that state.

President Faville announced that the Royal Institute of British Architects proposed to hold a Congress and asked the Institute to be represented and send an exhibit.

An appeal was made that Chapter members approach educators in their localities in the furtherance of architectural education.

Mr. D. Knickerbacker Boyd reported on the National Construction Congress and on the subject of apprenticeship, which he characterized as the demand of the day. He pleaded for friendly encouragement of the workman by the architect, declaring such recognition had much to do with the problem. Mr. Ellis F. Lawrence, of Portland, Oregon, described operation of the building industry in Oregon, declaring that The Guild and the industrial organization were its two outstanding features. Mr. Grosvenor Atterbury spoke in much the same vein as Mr. Boyd in regard to apprenticeship and directed attention to the reluctance, from architect to plasterer, for "his boy to follow his business." Mr. Atterbury attributed much of this feeling among workmen as well as other troubles to the brutality of superintendents, who were the mouthpieces of the architect and the contractor.

Other officers elected are: First Vice-President and Director, N. Max Dunning, Chicago; Second Vice-President and Director, William Stanley Parker, Boston; Secretary and Director, Edwin H. Brown, Minneapolis; Treasurer and Director, D. Everett Waid, New York; District Directors, third district, C. C. Zantzinger, Philadelphia; fifth district, C. Herrick Hammond, Chicago; eighth district, William E. Fisher, Denver; Honorary Corresponding member, Gorham Phillips Stevens, American Academy in Rome.

* * * *

Concrete Floor Tests

THE hollow tile and reinforced concrete floors of the Arlington Building, Washington, D. C., occupied by the U. S. Veterans Bureau, were tested by loading them and measuring the deformation.

In this structure, the tiles were placed in rows and spaced four inches in each direction. Reinforcing steel was placed in these spaces near the bottom of the slab in the panel and near the top of it across the supporting beams. The concrete was poured around the reinforcing bars and into the open ends of the tiles.

The building was intended for a hotel but was later turned over to the government for the use of the Veterans Bureau. The original design load of 75 pounds per square foot was increased to 100 pounds per square foot and the increased strength obtained by a two-inch layer of concrete over the tops of the tiles.

The panels of the floor were loaded with sand bags up to 380 pounds per square foot and the stresses in the steel and the concrete measured. The maximum stresses developed in the steel reinforcements were about 27,000 pounds per square inch and those in the concrete about 1,600 pounds per square inch. The effect of time under load was to increase the stresses in the reinforcing steel from 15 to 20 per cent. This was particularly pronounced in the first 20 hours and was comparatively small later.

The panels tested varied in the ratio of length to width. It was found that with the increase of that ratio, the stresses in the reinforcing steel at the bottom of the slab and those at the top of the slab (across the girders) increased in the direction of the short span and decreased in the long one. The stresses in the girders were lower than those in the slab.

The factor of safety of the structure was greater than two. This factor is the ratio of the maximum load the structure can sustain to the load which can be safely allowed when the building is in use.

These tests are described in Technologic Paper No. 236 of the Bureau of Standards, copies of which can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.

* * * *

The Architect and the Salesman

THERE are as many different kinds of salesmen as there are things that are salable. To try and lay down rules for the guidance of salesmen in their relations to architects is as useless as trying to fly to the moon. Temperament, physical characteristics, state of mind, time and place, must all be taken into consideration by the salesman who would sell his material to the architect.

The architect is no exception to the great majority of business men who have to be approached and analyzed by the salesman. The architect, as a rule, is no more cranky or ill-natured than the heads of departments in any large concern. The salesman must take into consideration that he is not the most popular man with the architect whom he wishes to see. A large part of the architect's time is taken up with attentions to salesmen. When the latter comes plunging into the architect's office, rushes up and extends his hand to the ogre, unless there is a personal friendship between the two, there is a decided impression for the worst towards the salesman. Perhaps the architect has never seen him before, and does not know him from Adam.

Dignity and culture should be characteristic of salesmen, the same as is true of anyone else in the business world. The salesman who can give the architect some information is always welcome. He should be a man thoroughly conversant with his product, its manufacture, application and comparison with similar materials.

Very often a fast friendship springs up between architect and salesman; more than likely due to the mutual help which they have given each other. Under these conditions it is a pleasure for these gentlemen to meet, to the accomplishment of hearty hand-shaking.

Affability and approachability on the part of the architect should

be the rule. The loud, fresh and over-confident salesman cannot expect courteous treatment from the architect. When the salesman calls on the architect he should remember that he is taking up valuable time, and should be as brief as possible. He should, on request, furnish information as desired in return for the time given him.

If the architect is the right sort of man he will give the salesman just treatment in the use of his materials. Most architects use their best judgment in respect to materials. When the architect has given his best judgment to a material his decision should be taken as final. Many salesmen when they cannot sell their stuff through the architect, very often go to the owner, behind the architect's back, many times with a knock. Such a salesman is a very dangerous kind of man to have around, and if he still continues to come around this same architect's office, he will sooner or later be invited to cease his visits.

The once-over salesman is well known to all architects. He never sells a second time. A good material, once introduced through the architect, will sell itself afterwards. Architects want the best, and if the salesman delivers goods of the right kind he need not worry about future business, for his goods will always be used.

We might call attention to the "guarantee" salesman. He is a genuine joke. He talks entirely in terms of "guarantee." "We stand behind our goods," he says. Any architect knows that good goods need no one to stand behind them. As far as the spectre of "guarantee" is concerned, we have yet to see the house that won't crawl out of a guarantee if possible.

Taken altogether, the vast majority of salesmen that call on architects are gentlemen, and consequently well received. We welcome the salesman who is a help and not a hindrance.

—Washington State Architect.

* * * *

The Truth About Architects

The following notice is taken from the Engineering-News Record, issue of June seventh:

'The other day the Boston Herald carried a leading editorial entitled "On Bridges, Architects and Engineers." It served two purposes—it filled over a column of reading matter that otherwise would have taken some thinking, and it raised to unholy wrath every engineer in the paper's clientele. "One sees an announcement" says the Editorial, "that a bridge is to be constructed and then follows the statement that engineers are preparing the drawings. Why engineers? . . . Architects as a body have the advantage over the engineer. They are better trained, they have a wider field in which to practice and this gives them more training. . . . They are generally drawn from men of high intellectual ability," and more in the same vein, not answering the rhetorical question of the second sentence but proving the worthiness of the architect as a bridge builder. So far none of the infuriated engineers who have sought out the Editor of the Herald has been able to inflict the bodily harm intended—but that is because he has retreated to the refuge of his sanctum whence he is vainly seeking to extract an apology from the high-school sophomore who wrote the Editorial that afternoon the Editor was out on Devonshire Street admiring the intellectual ways the architects were putting down those funny foundations of the First National Bank Building."

A Word to Architects

ARCHITECTURE, the architects think, has been ignored by the press and public, and the time has come when something should be done about it. The Committee on Education of the American Institute of Architects, for example, has issued a ponderous volume on "The Significance of the Fine Arts." It holds the fond belief that if the people can but be tempted to direct their attention to significance, architecture will rise to new heights. Incidentally, and it is useless to disguise the fact, the trade of the architect is being interfered with; not seriously as yet, but to an extent which is at least disquieting. The volume of building now passing through the hands of architects, even including the graduate carpenters and real-estate men who boldly assume the title, is pitifully small. On the other hand, the volume going to engineers and the big contracting firms who are supplying architectural service, is steadily increasing. The phenomenon is not yet of striking or portentous moment to the architects, at least not in their public pronouncements; but still it has that precious quality called significance.

In the New York Times of 20 May last, Mr. Walter Lippmann considered the sad plight of architecture; and in chiding the profession for its failure properly to get its works before the public, he said:

> Not to have supplied this service of criticism of buildings and this personal introduction of the creators is a serious neglect on the part of those concerned with architecture. This is the present day method of gossiping—of satisfying the inquisitive instinct. Where in earlier, smaller, and less hurried groups, talk about buildings and architects was passed by word of mouth, the press or other organized publicity must to-day bodly declare these things or the living people will never have the opportunity to be more than merely conscious of that art which is always closest to them and the most conspicuous mirror of their culture.

If the architects allow themselves to be lulled into a sense of security by these brave words of Mr. Lippmann, we think he will have done them a disservice which they will be likely to regret. In the first place, what could be more ridiculous than to suggest that it is necessary or possible to bridge, through organized publicity, the gap between the day when architecture was literally the written record of mankind, in symbolic characters almost universally understood, and the present day when the symbolism is of a different kind, even though our architecture is still mankind's ineluctable record? This is the sheerest nonsense yet put forth as a plea for the architect. If he be led to put his money on this kind of horse in the mad race for publicity, the maddest race of our day, then he will be more stupid than he seems.

Mr. Lippmann says that architecture is "the most conspicuous mirror of our culture." Certainly it is; and it reflects our culture back to us in symbols which are so intensely disagreeable that one shrinks from interpreting them. Here is where publicity ought to begin, but never does; and the press is the last place in the world where any person could get a hearing who attempted to show how and why our cities have been built up into the architectural hodg-podges that they are. The architects have so much to explain and apologize for that they may well turn towards publicity; but they will be unlikely to get very far by assailing us with the significance of the fine arts, or the difference between Gothic and Renaissance, or by telling us that Mr. Corbett's Bush Terminal is a better building than the Woolworth, as it is, or why the Grand Central is a better station than the Pennsylvania, as it is. In other words, scrapbook gossip will not help their case or the public's understanding of the position of architecture in the modern world. If, on the other hand, they will get down to business and tell us why 99.99 per cent of the

architecture of New York, or any other city, is so far short of their ideals and their true capabilities, they may make a real and valuable contribution to the general sum of knowledge on the subject. This would be not only a step in the right direction, so far as architecture is concerned, but it would be a step in the direction of maintaining the architect as a useful vocationalist. Something, indeed, has already been done along this line. Mr. Nimmons has taken a step towards explaining the high-building business in Chicago. Mr. Ackerman has gone far in explaining the influences that now render the architect all but impotent except in the occasional commissions where he is not ruled by the law of investment for profit. These men are eminent architects, with fine works to their credit, and the courage to record the result of their study and observation.

In solving this particular difficulty Mr. Lippmann could be of the greatest assistance to the architects. If he would help them to discover how any discussion of the malevolent influences of privilege, as manifested in such phenomena as speculation in land, and industrial sabotage, might be carried on openly in the public press, there would not be enough gratitude in the United States to reward him, even if every citizen contributed generously.

The question is becoming a pressing one, no matter what happens to architects or architecture. The steadily declining quality of materials and workmanship which has been forced upon building of late years, has engendered a speeding up of physical deterioration which is appalling even to the most conservative and hopeful optimists. If it does not already take as many workmen to keep buildings in repair as it does to build new ones, then it very shortly will, for repairing requires more men, to produce the same result, than does new building; and the cost of replacing iron piping alone, is staggering. Everywhere, in the building game, we are facing the inescapable result of having sacrificed everything in the race to capitalize the monopoly value of land. The assumption that the situation can be remedied by getting people to understand the significance of the fine arts, is naive. Under such conditions art can not flourish, no matter how much understanding of its significance exists in the popular mind.

Mr. Lippmann, in commenting upon the value of publicity, mentions the case of St. Thomas's Church in New York City, which achieved fame, forsooth, not because of its architecture but because of the symbolic allusion to marriage which was carved in the ornamentation over one of its doors. What a pity that Mr. Lippmann did not roam around to the Fiftieth Street side of St. Bartholomew's, another church by the same architect. Here he might have noted a very nice doorway, ecclesiastical in aspect, and over it, carved in the stone lintel, he might have read these words: "O send out thy light and thy truth that they may lead me and bring me unto thy holy hill and thy building." Here is a symbolic invitation to enter, or at least to recognize an entrance; but there is no need to guess how little it was understood. A plain sign nailed to the old doorway now informs the passerby: "Entrance to Office through Gate."

Architects who are interested in the rehabilitation of their profession will also perceive, let us hope, the plain, matter-of-fact significance in the conditions which daily confront them in its practice. Those conditions inform them, as plainly as any guiding signboard: "Entrance to Architecture is Through the Use of Land and Credit for the Common Welfare and not for Privilege."—The Freeman.

Painting of Radiators

NOT many years ago, says the Illinois Society of Architects Bulletin, aluminum paint was used on the underside of metal electric lamp reflectors on account of the impression that was generally held that aluminum has high light reflecting powers. It was later definitely demonstrated that by painting the underside of the lamp reflectors white, the efficiency of light reflection was materially increased.

Now the American Society of Heating and Ventilating Engineers tells us that paint made from aluminum and gold bronzes, which has been so generally used for painting radiators and steam pipes, is quite as much of a hindrance to efficient heat radiation as aluminum paint was to light reflection.

The late John R. Allen, Professor of Mechanical Engineering of the University of Michigan, conducted extensive laboratory tests on the relation of colors and finishes used on radiators to the transmission of heat, and according to his findings, the use of aluminum paint on radiators retarded the radiation of heat 26 per cent!

In a paper by Prof. Allen, recorded on page 274, volumne 24, Journal of American Society of Heating and Ventilating Engineers, the following statement is made:

"If a radiator is painted with any kind of flake metal pigment such as aluminum, gold or bronze, its efficiency is reduced approximately 25 per cent. If it is painted right over the aluminum with an enamel, the heat transmission is the same as the bare iron. I have made these experiments with 14 coats of paint on the radiator and the effect of the last coat and the first coat was practically the same.

"This shows that the heat transmission of the radiator depends upon the ability of the surface to dispose of the heat and not upon the conductivity of the material of which the radiator is composed. That is, under the conditions existing in a radiator, the heat is transmitted much more rapidly through the metal of the radiator than the surface of the radiator can dissipate the heat. It is possible that we may find some coating which can be placed upon a radiator that will increase its conductivity beyond that of the bare iron. I do not know that any attempts have ever been made to do this, but it is one possible means of increasing radiator efficiency."

In later experiments, Prof. Allen actually did find a coating which could be placed on a radiator which increased its conductivity over that of bare iron. One was a damar enamel and the other was a zinc oxide paint, both of which resulted in an increase in conductivity of 1 per cent.

The published results of Prof Allen's experiments with the use of various colors on radiators in round figures are as follows:

	per cent gain over bare metal
Snow White Enamel	1
Zinc Oxide Paint	1
Bare Metal	0
Terra Cotta Paint	0
Bronze Green Enamel	0
	per cent loss
White Paint	1
Light Green Paint	1
Light Brown Varnish	2
Dark Brown Varnish	2

Silver Gray Enamel	3
Terra Cotta Enamel	4
Green Enamel	4
Copper Bronze	24
Aluminum Bronze	26

* * * *

Floor Loads for Office Buildings

EARNEST consideration of the question of the proper magnitude of live loads for office building floors is being given by the Building Code Committee of the United States Department of Commerce, and facts of great importance to the structural engineer are being disclosed. Observations which have formed the basis of present specifications are being supplemented by careful studies of floor live loads of numbers of buildings in the United States.

Up till the present the most important series of floor live load studies ever conducted was that of Blackall and Everett, carried out in Boston, thirty years ago. According to their observations, which were made on the floors of three large office buildings in Boston, the highest live load found in any one office amounted to 40.2 lbs. per square foot. The average of the ten heaviest loadings in each of the three buildings amounted to only 25.9, 29.8 and 29.0 lbs per square foot. This directed in a striking manner attention to the remarkable lightness of usual maximum loads on office building floors, and one of the incidental facts established was that a very considerable reduction of live load in the design of columns might be made. This arose from the fact that the greatest maximum average for all floors of any one of the buildings investigated was 17 lbs per square foot, or 42 per cent of the maximum observed floor load on any one floor. Hence it has followed that most structural engineers are prepared to design the lower tiers of columns for a tall building for a live load not over 50 per cent of the maximum possible live load on all floors above.

The most important of the recent investigations made by the Building Code Committee is that on the Equitable Building, New York City, regarded as probably the largest office building in the world. As reported by Engineering News-Record, the maximum loads observed varied from 30.7 to 78.3 lbs. per square feet, although in the latter case, if certain book shelves had been filled, the loading would have amounted for the room in question to 87 lbs. per square feet. The latter load occurred in a room which was selected as one of specially heavy occupancy, being devoted to the housing of a large law library. The above figures relate of course, particularly to the problem of floor design. So far as column design is concerned, the figure to be noted is about 11.6 lbs. per square feet, which represents the average live loads on the three floors particularly chosen for study. Excluding offices given over to a specially heavy occupancy, the maximum floor load observed was 55.4 lbs. per square feet, and comparing the average load on the three floors with this, it is seen that it is scarcely more than 20 per cent of the maximum. In this we have additional ground for liberal reduction of column live loads.

Another investigation undertaken by the committee was on the building of the Union Central Life Insurance Co., Cincinnati. Several large sections of different stories of this building devoted to clerical and filing purposes were studied. The average weight of furniture for these sections was 7.4 lbs. per square feet, and if to this be added the

weight of employes not exceeding 1.8 lbs. per square feet, it is seen that the average loading is not above 9.2 lbs. per square feet, although the office floors were designed for 50 lbs. per square feet.

* * * *

Report of Conference on Simplification of Hollow Building Tile

At a meeting held June 19, 1923, at the Department of Commerce, the Standards Committee of the Hollow Building Tile Association reported to the Department's Division of Simplified Practice, the results of a survey which the Association had made of existing varieties in types, sizes, and weights of hollow building tile.

The survey showed 36 different sizes—each made in a wide variety of weights. The Committee recommended the elimination of 23 of the 36 sizes, and the retention of 13 as "standards" for the industry. A standard weight, with a permissible variation of 5 per cent over or under the standard weight, was also recommended for each of the 13 sizes retained.

The Committee requested the Department of Commerce, through its Division of Simplified Practice, to call a general conference next October of manufacturers, architects, engineers, contractors, and builders to discuss the general adoption and use of the recommended standard sizes and weights.

This is another decided step forward in the Hoover plan to reduce the cost of building construction through the elimination of waste in industry.

* * * *

Why Chimneys Lean Eastward

BRICK chimneys usually lean toward the east. The following theory has been offered in explanation: At night moisture accumulates in the chimney, and during the forenoon the side toward the sun dries out more rapidly than the opposite side, causing shrinkage of the brickwork on the eastern side very much as a board warps when unequally wet on opposite sides.

Alternate heating and cooling causes progressive expansion of cast iron and of some other materials. Progressive expansion of stone slabs has been found in certain graveyards. The southern and eastern faces of gravestones are often more readily disintegrated than the northern and western faces, due apparently to a greater degree of progressive expansion on the sides most exposed to the sun. If the western side of masonry is thus expanded permanently more than the eastern side, the masonry will lean toward the east.

The Egyptian obelisk in Central Park, N. Y. City, is of granite that is not porous, yet the heiroglyphics on its southern and western faces are more badly disintegrated than on its northern and eastern faces. This is explained by the progressive expansion theory, but is not explained by the moisture penetration theory.

Asphalt pavement that has little or no traffic becomes porous through progressive expansion, and it also shows a tendency to creep down steep hills.

THE
Architect and Engineer
Incorporated
Founded 1905 by E. M. C. WHITNEY
W. J. L. Kierulff - President and Manager
Fred'k W. Jones - Vice-Pres. and Editor
G. H. Oyer - - - Advertising Manager
L. B. Penhorwood - - - - Secretary
T. C. Kierulff - - - - - - - Attorney
Associate Editors
Irving F. Morrow - -Architectural Critic
Chas. H. Cheney - - - - City Planning
Chas Peter Weeks - - - - Book Reviews
Emerson Knight, Wilbur D. Cook } Landscape Architecture
Wm. B. Gester - - Inspection and Tests
O. P. Shelley, C. E., F. W. Fitzpatrick } Fireproof Construction
T. Ronneberg, C. E. - - Structural Steel
W. H. Lowe - - - - Roofs and Roofing
Fred'k N. Woods, Jr. - - Rock and Gravel
Chas. Felix Butte - Electrical Construction
J. W. Fricke - - - - School Equipment
Will J. French - - Department of Safety

Published Monthly in the Interest of the Architects, Structural Engineers, Contractors and the Allied Trades of the Pacific Coast by The Architect and Engineer, Inc.

PUBLICATION OFFICE:
627-629 Foxcroft Building, San Francisco
Telephone Douglas 1828

The publishers disclaim any responsibility for statements made in the advertisements of this magazine.

Terms of Subscription
(Including postage) to all parts of the United States, $2.50 per annum; to Canada 75c additional; to all Foreign points $1 additional

Vol. LXXIV JULY, 1923 No. 1

TEACHING OUR DISABLED VETERANS ARCHITECTURE

Studying architecture at the Southern Branch University of California in Los Angeles are some seventy veterans, disabled in the late war. These men are fighting their way back to health and are striving at the same time to fit themselves to fight life's battle—to compete as draughtsmen and architects with the rest of us. Pitifully handicapped as most of these Government trainees are, it is obvious that the broadest and most comprehensive training that can possibly be obtained for them is none too much.

Unfortunately, these veterans are being trained under the auspices of the United States Veterans Board—a great, top-heavy, utterly soulless political machine, reeking with inefficiency and autocratic bureaucracy. A recent order for economy was sent out from Washington, and the local bureau decided that the best road to saving would be to cut down the training period of the veterans. And so a so-called course in architecture—one of which was for a "designing draftsman," a course which allowed but one and a half years of University training, without either free hand drawing or design—was "composed" by the Veterans Bureau, and forwarded to the University with the statement that "it should be given every consideration, looking towards its adoption at your school."

The lamentable part of it all is that the disabled veterans must keep on fighting—not just for health, but for the right to be properly rehabilitated, which the people of the United States, through Congress, have granted them. The Veterans Bureau is apparently quite satisfied if it places the veterans in any position where they can earn an "existance wage"; it cannot be concerned with sufficiently equipping these unfortunate heroes so that they can climb after their training period has come to an end.

SUCCESSFUL ARCHITECT SHOULD ASSERT HIMSELF

Because of the reputable architect's close observance of the ethics of his profession the public generally has suffered, and Americans today have but little appreciation of architecture. Had it been possible for the architect to make his presence more strongly felt all would be more advantageously situated today. Finer and s a f e r buildings would stand as monuments to the competent architect and intelligent owner, instead of the clumsy, barnlike firetraps that occupy many of the finest building sites in American cities.

The architect—he who is really capable and who stands high in his profession—has been reluctant to

step forward and assert himself. The code of ethics to which he subscribes warns him that there is a line beyond which he must not go in his endeavor to obtain commissions. The aggressive business man, accustomed to dealing with an entirely different type of man, has often been led to believe that the architect is a more or less visionary dreamer—an impractical artist instead of the exceptionally practical man that he really is.

There are "mustang" architects licensed to practice, but it is not difficult for the business man to detect these parasites. They will accept a commission on a cut-rate basis, promise anything and everything and leave the owner with a bill for "extras," a misfit structure and too often a belief that an architect can well be dispensed with.

The reputable architect takes far more pride in his work than satisfaction in the commission he receives. The architect of today, if he would be a success, should not keep in the background—he should assert himself, always, however, in a dignified manner.

Competition For $5,000 House

The Community Arts Association of Santa Barbara announces a competition for the best design for a house costing not more than $5,000, the program for which is given herewith in full:

The competition is under the direction of the Plans and Planting Committee of the Community Arts Association, of Santa Barbara, who are authorized to select the best designs.

Carleton Monroe Winslow, Van Nuys building, Los Angeles, California, has been chosen as Consultant, to whom may be sent inquiries regarding interpretation of the rules of the competition, etc. Copies of such inquiries and answers will be sent to all registered competitors. No inquiries will be answered after August 15th, 1923.

The jury of awards shall consist of five members, three of whom shall be professional members from the American Institute of Architects, and two lay members designated by the Community Arts Association.

The consultant shall be ex-officio a member of the jury, but without vote. Members of the jury shall not enter the competition.

Competitors shall be registered with Mrs. O. L. Hathaway, Business Secretary of the Community Arts Association, 936 Santa Barbara street, Santa Barbara. Written applications must be received before 6 P. M., August 15th, 1923, but such applications postmarked on August 14th, will be considered as eligible.

Drawings must be received by the Business Secretary of the Community Arts Association on or before 10 p. m., September 1st, 1923.

For the convenience of Los Angeles competitors, drawings will be received at the office of the Consultant on or before the same hour and date.

All drawings received after the closing date may be exhibited but will be considered "ors de concours."

The competition is open to anyone. Drawings shall be submitted anonymously, no names or other identyfying marks are to be presented with or indicated on any part of the drawing or materials contained in or enveloping the same. The competitors are to present their identity in a plain sealed envelope contained in the package of the drawings. The outside wrapping must be labeled in large, plain letters, "Small House Competition." The drawings and envelope will be given duplicate numbers for further identification.

Drawings shall not be exhibited until after the award.

The drawings shall be individual work of the competitors. work of partnerships will be eligible Criticisms of patrons, as obtains in architectural ateliers, is allowable, but drawing and rendering must be done by the competitors.

A report of the awards will be made to each competitor.

All drawings will be returned to unsuccessful contestants within three weeks after the award.

Competitors may submit more than one project, but a competitor shall receive but one money prize. Other projects submitted by a winning competitor, if eligible, will receive honorable mention, "hors de concours."

The subject is as follows: A dwelling house, suitable for California, of not over five rooms, including living room, dining room, kitchen, two bed rooms and bath (living room and dining room may be combined but will nevertheless count as two rooms) placed upon an inside lot 50 feet wide upon the street and building line, and 150 feet deep without an alley in the rear, also a garage for one car which may or may not be separate from the house and placed anywhere on the lot. The street in front is supposed to be level and has a five-foot sidewalk directly abutting the building line and a parking strip five feet wide between the sidewalk and the street pavement. The contours of the lot may be determined by the contestant, as may also the points of the compass.

The character of the house, such as an exterior of stucco, shingles or clapboards, also the size of rooms, and whether the house shall have one or two stories, shall be left to the discrimination of the competitor.

The drawings shall be accompanied by a bona fide estimate of cost by a responsible builder. It is recommended, but not required, that the estimate be itemized. The house must not cost over $5000., which sum shall cover all painting and decorating, exterior walks and drives, but not gardening or planting.

Drawings required. Work presented shall be on one sheet of white drawing paper, mounted on cardboard 30x40 inches in size, with the title at the bottom of the narrow side so that the drawing may be shown vertically. The drawing shall consist of floor plan or plans at one-fourth inch scale, one exterior elevation at one-fourth inch scale, a plot plan at one-eighth inch scale, showing garden treatment, and other plans if necessary at one-eighth inch scale. Also a perspective view of the house, scale optional. Minor details in elevation or perspective may be added. Competition drawings will be exhibited in connection with the Annual Exhibition of Small House Designs of the Community Arts Association.

The prizes are as follows:

A first prize of $500.

A second prize of $200.

A third prize of $100.

Five honorable mentions accompanied by prizes of $20 each.

Five mentions without money prizes.

Honorable mention, "hors de contours," as provided for above.

All drawings awarded prizes or mentions shall become the property of the Community Arts Association, who serve the right, also, to hold all other exhibited drawings for a sufficient length of time to make photographs of same for publication.

Competition drawings will be exhibited in connection with the Annual Exhibition of Small House Designs of the Community Arts Association, opening September 15th.

The Number of Builders Compared with the Number of Apprentices

The 1920 census gives the following:

Architects	18,185
Draftsmen	52,865
Builders and building contractors	90,109

Of course a large number of these draftsmen are engaged in engineering offices and not in architectural offices. Probably 20 per cent of the "builders and building contractors" are engaged in construction other than erecting buildings.

The 1910 census showed nearly twice as many "builders and building contractors," probably because foremen and small sub-contractors were included.

The building trades are given as follows for 1920:

Brick and stone masons	131,264
Ditto apprentices	1,434
Carpenters	887,379
Ditto apprentices	4,805
Electricians	212,964
Ditto apprentices	9,562
Painters (building only)	248,497
Ditto apprentices	1,316
Paper hangers	18,746
Ditto apprentices	172
Plasterers	38,255
Ditto apprentices	398
Cement finishers	7,621
Plumbers and fitters	206,718
Ditto apprentices	7,386
Roofers and slaters	11,378
Ditto apprentices	250
Stone cutters	22,099
Structural iron workers (bldg)	18,836
Total skilled workers	1,829,380
Laborers (building)	623,203
Total	2,452,583

There were 242,096 "stationary engineers," and 37,888 "cranemen, derrickmen and hoistmen," an unknown number of whom were engaged on building work.

It will be noted that the apprentices in each of the building trades are so few in number as to be almost negligible. This is a sad commentary on labor union restrictions relative to apprentices.

There are approximately 25,000 architects and draftsmen, 75,000 building contractors, 1,800,000 skilled workers and 600,000 laborers, making a grand total of 2,500,000 men engaged directly in structural work.

Since labor constitutes approximately one-half the cost of building (materials and transportation constituting the other half), there are nearly 5,000,000 men engaged in building and in supplying the builders with materials.

American Institute of Architects

(ORGANIZED 1857)

San Francisco Chapter

OFFICERS FOR 1923-24

PRESIDENT ..... GEORGE W. KELHAM
VICE-PRESIDENT ..... HENRY H. MEYERS
SECRETARY-TREASURER ..... J. S FAIRWEATHER

DIRECTORS

WILLIAM MOOSER ..... THREE YEARS
J. H. BLOHME ..... THREE YEARS
A. J. EVERS ..... TWO YEARS
HARRIS ALLEN ..... TWO YEARS
S. SCHNAITTACHER ..... ONE YEAR
MORRIS M BRUCE ..... ONE YEAR

Oregon Chapter, Portland

PRESIDENT ..... CHARLES D JAMES
VICE-PRESIDENT ..... FOLGER JOHNSON
SECRETARY ..... WILLIAM L. SMITH
TREASURER ..... ORMOND R. BEAN

DIRECTORS

WM. C. KNIGHTON WM. G. PURCELL JOHN V. BENNES

Southern California Chapter

PRESIDENT ..... SUMNER P. HUNT
VICE-PRESIDENT ..... A. M. EDELMAN
SECRETARY ..... CHAS. F. PLUMMER
TREASURER ..... ALFRED W REA

DIRECTORS

C. E. NOERENBERG ..... ONE YEAR
DAVID J. WITMER ..... TWO YEARS
EDWIN BERGSTROM ..... THREE YEARS

Washington State Chapter

PRESIDENT ..... CARL F. GOULD
SECRETARY ..... A. F. MENKE
TREASURER ..... CARL SIEBRAND
FIRST VICE-PRESIDENT ..... LOUIS BAEDER
SECOND VICE-PRESIDENT ..... ROY S. MASON
THIRD VICE-PRESIDENT ..... GEORGE H. KEITH

San Francisco Architectural Club

77 O'Farrell Street

PRESIDENT ..... MARK T. JORGENSEN
VICE-PRESIDENT ..... EDGAR B. HURT
SECRETARY ..... CARL R. SCHMIDTS
TREASURER ..... JOHN A. PETERSON

DIRECTORS

LLOYD COLE FELIX RAYNAUD HAROLD W. WEEKS

California State Board of Architecture

Northern District

Phelan Building, San Francisco

PRESIDENT ..... CLARENCE R. WARD
SECTY. & TREAS. ..... SYLVAIN SCHNAITTACHER

233 Post Street

EDWARD GLASS JOHN J. DONOVAN JAMES R. MILLER

Southern District

Pacific Finance Bldg., Los Angeles

PRESIDENT ..... WILLIAM J. DODD
SECTY. & TREASURER ..... A. M. EDELMAN
JOHN PARKINSON MYRON HUNT W. H. WHEELER

With the Architects

Building Reports and Personal Mention of Interest to the Profession

Sacramento Department Store

Working drawings are being prepared by Architects Powers & Ahnden of San Francisco for Weinstock-Lubin Company's new department store building at 12th and K streets, Sacramento. This structure is to occupy ground area 160x200 and will be three stories and mezzanine with foundations sufficiently strong to carry two additional floors. Approximately $650,000 will be expended on the building.

Los Angeles High School

A new polytechnic high school building is to be erected at Washington and Hope streets, Los Angeles, at a cost of $350,000. Messrs. Morgan, Walls & Morgan, Van Nuys building, Los Angeles, are the architects.

Plans have been completed by Architect Edwin Bergstrom for a brick high school building on 79th street, Los Angeles, and to be known as the John Fremont High School. This structure will cost approximately $600,000.

To Design Elks Building

Messrs. E. C. Hemmings and Leonard F. Starks, associated, have been selected in a informal competition to prepare plans for the new Elks building at Sacramento. It is proposed to build an eight-story Class A building at 8th and J streets, the structure to contain offices, dormitories for members, lodge rooms, hall and gymnasium. The lodge has a building fund in excess of $750,000.

San Jose Club Building

Architects Binder & Curtis of San Jose have completed working drawings for a Class A store, office and club building to be erected on First street, near Santa Clara, San Jose, by the Commercial Building Company. It is expected that contracts will be let and construction started within a month. The building will cost $350,000.

Claremont Residence

Architect Clarence Tantau, 251 Kearny street, San Francisco, has completed plans for a residence to be built in Claremont, Alameda county, for Mrs. J. H. Balsbon. Mr. Tantau has awarded contracts for the construction of an orphanage for the Home of Benevolence at San Jose at a cost of about $100,000.

San Francisco Apartment House

Architect Henry Shermund, Hearst building, San Francisco, has completed plans and bids have been taken for a three-story and basement reinforced concrete apartment house to be erected on the south side of Pacific avenue, west of Broderick street, San Francisco, for S. A. Schwart. The building will be electrically equipped and will contain six, four-room apartments and eight five-room apartments.

Sacramento Revised Building Code

Architect James Dean, of Dean & Dean, Sacramento, has been commissioned by the Sacramento City Commissioners to draft plans for a new building code. At the present time the city practically is without a building code, although there are certain specifications and rules that must be followed out under the supervision of the city building inspector. The revisions, among other things, will provide for more stringent means of enforcing building regulations.

Theatre And Apartments

Architect F. J. De Longchamps of Reno is preparing plans for a brick store, theatre and apartment building to cost $75,000 to be erected in Elko, Nevada for Mr. John J. Hunter. Mr. De Longchamps has also prepared plans for a town hall at Susanville and for a new clubhouse for the Reno Golf Club. A contract has been let by the same architect for a $40,000 residence in Reno for Dr. V. A. Muller.

Concrete and Brick Garage

Architect E. C. Hemmings has prepared plans for a concrete and brick garage, 40x160, for the Reo Motor Car Company at 14th and K streets, Sacramento. The building will cost $40,000. Mr. Hemmings is also at work on plans for a seven-story concrete office building to be erected on 7th street, between I and J streets, Sacramento, for the Lawyers Cooperative Association.

Commercial Building

Plans are being prepared by Architect Smith O'Brien for a one-story and mezzanine reinforced concrete commercial building to be erected on the south side of Bryant street, east of Fourth, San Francisco, for himself and Mr. C. B. Holson.

New Work in Mr. Kump's Office

The Ernest Kump Company of Fresno reports the following new work:

One story commercial store building located in the city of Chowchilla, Madera county, California. The building is to be erected for Mr. Charles H. Kendrick for the sum of $25,000.

One story concrete, brick and tile Science hall addition to the West Side Union High School, Los Banos, Merced county. Estimated cost $20,000.

One story and basement frame addition to the Manning School, Fresno county, consisting of one classroom and banquet room. Estimated cost $7,000.

A 30x80 concrete and brick automobile buss garage and addition to Science hall for the Board of Education of the Visalia Union High School district.

Four room concrete, brick and tile Parocial school and eight room Convent building for St. Mary's Parish, Visalia, Tulare county.

Three story reinforced concrete, fire proof hotel for Messrs. Jack Triglia and F. Pedrone, Los Banos, Merced county. Estimated cost $45,000.

A $20,000 Old English ten room country home for Mrs. J. Sub Johnson, Visalia, Tulare county.

A $40,000 Elementary School for the Woodlake School District, Woodlake, Tulare county, and a $100,000 school for Reedley.

Chain of Stage Depots Planned

Mr. Louis R. Lurie of San Francisco has announced that he has arranged with the Pickwick Corporation to build for the latter a chain of automobile stage depots in all the principal cities on the Coast reached by the Pickwick Corporation. Some of these buildings will contain hotel quarters, news and cigar stands and dining rooms. O'Brien Bros., 346 Montgomery street, San Francisco, probably will prepare most of the plans. Among the cities that will have depots are San Francisco, Los Angeles, Portland, Roseburg and Medford, Oregon, Yreka, Redding, Red Bluff, Sacramento, San Jose, Watsonville, Salinas, Paso Robles, San Luis Obispo, Santa Barbara and Ventura.

Architects to Compete

American architects are invited to draft plans for a hospital to be built in Mexico in competition for three adequate money prizes, according to a report to the Department of Commerce from Consul Thomas D. Bowman, Mexico City.

Personal

Architect H. Rafael Lake has moved from the Balboa building, San Francisco, to 522 Patterson building, Fresno.

Mr. E. R. Bobbe, of the firm of Piper, Kahrs, Dedrick & Bobbe, was awarded first prize of one year's paid up membership for designing membership card decorations for the Architectural Club of Long Beach. Mr. Nat Piper received second prize and Mr. N. E. Lee of the W. Horace Austin offices, third prize. Mr. James Rainey of the Austin offices was chairman of the design committee. The judges were: Messrs. George F. Deathridge, Alex. Silverstine and H. Ireland.

Long Beach Architectural Club

The Architectural Club of Long Beach has grown to be a strong organization with 63 members.

Meetings are held on the first Monday evening of each month, preceded by dinner, and social and educational programs are presented.

The first sketch competition for membership card was won by Mr. Earle Bobbe. Other competitions are to be held from time to time.

The club has subscribed $1000 to be used by the "Harbor Committee of Two Hundred" to advance harbor development. This is a committee of two hundred memberships of $1000 each, sponsored by the Los Angeles Chamber of Commerce, for the purpose stated.

Membership in the club is limited to residents of Los Angeles County. To be eligible applicants must be architects, engineers or designers for full membership, and in allied lines, material men, etc. for associate membership.

The entrance fee is $5.00 with yearly dues of $10.00.

Architect Plachek Busy

New work in the office of Architect James W. Plachek of Berkeley includes a large country residence at Fresno for Mr. E. O. Thompson, estimated to cost $40,000; a two-story brick addition to the Specialty Food Shop on Bancroft Way, near Telegraph avenue, Berkeley, and a $22,000 reinforced concrete store building on Telegraph avenue, Berkeley, for the Sather Gate Book Store.

Oakland Apartment House

Architect James T. Narbett of Richmond, is preparing plans for a two-story frame and plaster apartment house to be built on Excelsior avenue, Oakland, for Mr. August Johnson. The building will cost $25,000.

Bank Building

Architect Edward T. Foulkes, Crocker building, San Francisco, is designing a $50,000 branch bank building for the American Bank at 40th street and Piedmont avenue, Oakland.

New Work in Mr. Orr's Office

Architect Robert H. Orr, 724 South Spring street, Los Angeles, reports the following new work under construction or being planned by him:

One hundred room dormitory building, California Christian Colleges, Los Angeles, cost $250,000.

Residence for Mr. J. W. Bridenbaugh, Upland, cost $25,000.

Trade school and stores for the Young Mens Christian Association of Los Angeles, $50,000.

Home for the aged for the National Benevolent Association of St. Louis to be built upon a ten acre tract at Pasadena, the first unit of which will accommodate sixty persons. These units to cost $250,000.

Ontario Christian Church, Ontario, church building and Sunday school to cost $150,000.

Santa Monica Christian Church, Santa Monica, to cost $65,000.

University Christian Church, Los Angeles, $70,000.

Bakersfield Christian Church, Bakersfield, to cost $125,000.

Designing Big Erecting Shop

The Engineering Department of the Southern Pacific is preparing plans for a locomotive erecting shop to be built in Los Angeles, at an estimated cost, with equipment, of $600,000. The building will be 34x498, two stories high, of steel frame with brick exterior walls, steel sash and steel doors. There will be 24 engine concrete pits served by one 250-ton and 2, 15-ton traveling cranes.

Industrial Building

Architect Walter Falch, Hearst building, San Francisco, has prepared plans for a one-story and mezzanine reinforced concrete and hollow tile industrial building for Mr. M. C. Henderson. The location is the north side of Folsom street, west of Fourth, San Francisco.

San Francisco Apartment House

Architect William H. Weeks, 369 Pine street, San Francisco, has completed plans for a two-story frame apartment house for Miss Enid Crippen to be erected at Bay and Gough streets, San Francisco, at an estimated cost of $35,000.

San Mateo Theatre

Architects Weeks & Day of San Francisco are preparing preliminary plans for a moving picture theatre and store building at San Mateo. The theatre will have a seating capacity of 1200 and will be leased by Ackerman & Harris.

Los Angeles Architectural Club

The following have been elected members of the Los Angeles Architectural Club, the officers of which are Messrs. Clifford A. Truesdell, Jr., president; Lloyd Rally, vice-president; Paul W. Penland, secretary; Roscoe E. Bowles, treasurer; and William Lee Woollett, Donald Wilkinson and Walter S. Davis, directors:

Charles H. Cheney, Clyde Browne, Arthur C. Weatherhead, William L. Campbell, Richard Barba, Chas. R. Johnson, Alexander L. Taranin, Chester A. Williams, Franque Kuchler, Willard White, Donald Leroy Bartels, Harry J. Muck, A. R. Brandner, James P. Erskine, William Lundeberg, Francis E. Morehead, Frank Van Rehder, William K. Webb, Theodore L. Pletsch, Paul E. T. Silvius, Charles E. Samdell, Lowell W. Pidgeon, Vincent Palmer, Lawrence A. Mushall, M. L. Lemon, Claude F. Norris, Charles E. Smith, Joseph M. Savage, Lionel C. Banks, George C. Anderson, Stanley M. Cundiff, John B. Webb.

The following applications were voted upon at the June meeting: Messrs Henry Martyn Patterson, Architect and Engineer; Soule, Murphy & Hastings, Santa Barbara, Architects; Herbert Arthur Linthwaite, Architect; Bert McDonald, Architect and Structural Engineer; Carl R. West, Architectural Draftsman; W. J. Dodd, Architect; Leslie Harold Drum, Student at University of California, Southern Branch; B. H. Horton, Architect; Gordon Kauffman, Architect; Arthur Kelly, Architect; Garrett Van Pelt, Architect; Ralph O. Beattie, Architect; Frank S. Vigers, Draftsman; F. S. Stanton, Draftsman; Otto Neher, Architect; Kenneth Saunders, Draftsman.

The Security Housing Corporation competition for a $4500 house, held under the auspices of the Architectural Club of Los Angeles, was entered by about fifty-two members of the club. A jury appointed by the Southern California Chapter, American Institute of Architects, and consisting of Messrs. David Allison, Pierpont Davis and Frank J. Hudson, made the following awards: Messrs. Alfred Clarke, C. W. Lemmon and R. D. McPherson, all of Myron Hunt's office, received first, second and third prizes in the order named. Mr. Louis Korn, of Mr. Rosenheim's office, received fourth prize. These prizes were for $150.00, $75.00, $50.00 and $35.00 respectively. Messrs. Joe Estep, 1201 Van Nuys building, and Rodney McClelland, student at the Southern Branch University of California, were awarded honorable mentions.

Form Partnership

Mr. Alfred L. Vezina, for the past eight years associated with Mr. Matthew O'Brien, San Francisco architect, and previous to that time with the State Department of Engineering and the Thompson-Starrett Company, has entered the contracting business with Mr. John Diestel, general contractor and builder. Offices will be maintained at 248 Russ building, San Francisco.

Engineers Form Partnership

Mr. W. H. Ellison and Mr. Earle Russell have formed a partnership for the practice of structural engineering, with offices in San Francisco and Los Angeles. Mr. Russell will have charge of the Los Angeles office at 747 South Hill street, and Mr. Ellison the San Francisco office at 369 Pine street.

$20,000 Residence

Architect C. O. Clausen is preparing plans for a nine-room residence in West Clay Park for Mr. Solomon Schwartz. The same architect has completed plans for alterations to a two-story laundry building for Toulouse Bros.

Architects Move

Architect Mathew O'Brien of San Francisco has moved from the Foxcroft building to the Nevada Bank building, and Architect D. C. Colman has moved from the French Bank building to 1101 Market street.

Fresno Store Building

Architect Eugene Mathewson, Cory building, Fresno, has prepared plans for a one-story reinforced concrete building containing six stores for Levy Bros. The cost is estimated at $25,000.

Oakland Theater

Architects Reid Bros. of San Francisco, are preparing plans for a small moving picture theater to be built in Oakland for a client of Mrs. Gabriel Moulin. Structure will be of reinforced concrete.

Another Architect

Architect Warren Perry and Mrs. Perry are receiving congratulations upon the arrival of a son, the first in the family. Mrs. Perry was formerly Miss Joy Wilson of Berkeley.

Architects Drawn For Jury

Two San Francisco architects, Mr. Willis Polk and Mr. C. A. Meussdorffer, have been drawn to serve on the newly empaneled United States Grand Jury. Mr. Polk, however, was excused on his statement that he is not in sympathy with the Volstead Act.

Proper Priming Essential

THE failure of paint to give expected service upon any type of wood is due in a majority of cases to factors which may be easily overcome by the observance of principles which have been developed as a result of many practical tests. As the result of repeated requests from paint dealers, painters and property owners for information about painting the Institute of Paint and Varnish Research, Washington, D. C., has issued a special circular containing suggestions for painting. The author, Mr. Henry A. Gardner, of the Institute, says that the use of properly thinned priming paint is the basis of most good painting. It is most important that painting be avoided during damp weather. Dampness prevents proper penetration of the paint into the wood, delays the hardening or drying of the film, and produces a soft coating that may be affected by the weather. Often the dampness which may be drawn out through a new house from the fresh plaster will affect the paint and cause blisters to form. For these reasons it is very necessary that all exterior painting work should be done upon properly dried surfaces during a dry period of weather. Another factor which must be carefully avoided is the use of shellac over knots or sappy surfaces. When paint is applied over such shellacked surfaced, no penetration is obtained and the action of the weather will cause flaking and scaling at such spots. The use of ochre as a priming coat on new wooden surfaces should also be carefully avoided. Probably more cases of failure have been caused by this material than any other.

In selecting a paint for the dwelling the property owner should understand that best results are obtained with paints made by the thorough grinding of pigments and oils in the powerful machinery that is used by the manufacturer. The property owner should also be taught that the most durable results from exterior painting are obtained from the use of tinted paints. Permanent colors which are ground by machine into lead and zinc paints have the effect of increasing the durability of such paints by 30 per cent or more. Of course, in some instances white is the color that gives the most harmonious effect, but in most cases tinted paints should be selected. The majority of the high-grade prepared paints to be purchased from reliable dealers in any city will give the most highly satisfactory results, as they closely approximate the prepared paint that is called for in the specifications of the U. S. government.

Paints ready to apply will spread from

Field of the Contractor

Some Questions Answered for the Concrete Contractor

CONCRETE contractors will find considerable information of value in the following answers to questions on Concrete Construction propounded to members of the American Concrete Institute in the form of a question box, at a recent meeting of the Institute. A number of questions were grouped, because they were closely related, and in such case more than one question was assigned to one member to answer. In no instance was a question assigned to one who submitted it, but further discussion was invited on the floor of the convention, where the first speaker did not use the six minutes allowed for each question. The following were some of the questions and answers as reported in "Concrete."

Safe Unit Stress at 24 Hours

Provision is usually made in all building laws for the maximum loading to which the concrete may be subjected in compression after it has attained its full strength. We frequently have occasion to apply loading to concrete which is only a few days old, sometimes by means of hydraulic jacks and in other cases by direct loading. We are always confronting the assumption that we are overloading the fresh concrete. What would be considered the safe unit of stress in compression on concrete 24 hours old under normal conditions of weather and materials, assuming a 1:2:4 mix? What expedients other than those customarily employed can be used to increase the value of concrete in compression under the above circumstances?

The strength of concrete at 24 hours involves factors which do not enter into the later strength of the concrete, according to Mr. A. R. Lord, to whom the question was assigned for answer. The variations in strength of concrete where different brands of cement were used was pointed out as being one of the important factors governing 24-hour strength. Comparatively heavy loading is considered permissable in building alterations where the area loaded is small and the new concrete able to withstand higher stress.

The use of Cal to increase the early strength of concrete was suggested, and one instance cited where the use of 8% of Cal in caisson construction allowed a caisson to be pushed down in 12 hours, where previous time was three days.

Integral Waterproofing

Is the value of integral waterproofing purely psychological in its effect on the contractor?

In discussing this question, Mr. S. C. Hollister pointed out that when a contractor or foreman is instructed to use integral waterproofing, the instructions go along with the use of the waterproofing that very good concrete is to be made in order to get the proper results, and that the actual purpose of the waterproofing is not clear.

Included among the integral waterproofing compounds are the finely ground materials such as tufa or trass, about which there is some doubt as to the chemical action with the cement in the concrete. With the waterproofing which depends upon chemical processes, the principal function is to make the pores of concrete water repellent.

It was pointed out that while waterproofing may be required in some cases, to overcome defects, such as cracks in the concrete, and may also be desirable to increase the workability of the concrete without changing the consistency, where surrounding conditions are ideal by the proper mixing and placing of concrete no integral waterproofing is needed.

Corrosion of Reinforcing

Rusting of steel reinforcements in concrete construction causes the breaking or splitting off of concrete and otherwise injuring the work. What is the best method of keeping the steel from the exterior surface? How much protection is necessary? What is the best way to make repairs where the damage occurs?

The rusting of steel reinforcement in concrete construction, it was stated by Mr. M. Upson, gives more concern than any other question, because engineers are not careful enough in design.

The trouble generally begins at expansion joints. Various steps can be taken to prevent the rusting of reinforcements, the first being to get the engineer to design expansion joints properly; second,

---

500 to 800 feet per gallon, one coat. The average spreading rate, however, for the paint for three-coat work, when well brushed out, is generally reported as about 200 to 250 feet.

The number of gallons required for a job may be estimated by figuring out the square feet of surface to be coated and dividing by 225. For two-coat work, divide by 350. The cost of application will depend entirely upon wage scales in various communities and upon whether the work is done by an employe or the property owner himself. The use of spray machines for large surfaces will greatly reduce the cost of application.

to keep the steel away from the surface of the concrete; and third, by binding the steel together so as to ensure that it is held in its proper place. Reinforcing steel may be kept away from the surface with the aid of concrete blocks that hold the rods the proper distance away from the forms.

The amount of protection necessary for the reinforcing rods in concrete depends upon the concrete and local conditions. In some instances, the steel may be allowed close to the surface, while in others it should be 10 in. back. The report of the Engineering Institution of Great Britain on structural materials in harbor structures recommends 1½-in. to 2-in. protection in harbor construction.

In precast units, the steel should be kept as near the surface as possible, and yet allow the proper protection so as to be away from the neutral axis, to prevent cracking in handling. In touching up or repairing concrete where the reinforcing is exposed, the cement gun is recommended for use after the steel has been cleaned with the sand blast.

The Concrete Specialist Contractor

Is the concrete specialist contractor to become a thing of the past?

The question as to whether the concrete specialist contractor is about to become a thing of the past was answered in the negative by Mr. H. C. Turner, stating that this is a day of specialists, and that the specialist will continue in the building industry. Concrete building problems are classified as different from those with brick and steel. It is a peculiar material and special equipment and special organizations are advantageous in carrying out concrete construction.

Batch vs. Continuous Mixing

Why does the average contractor use a batch in preference to a continuous mixer?

Continuous mixers are not suitable in building construction, since there is a difficulty in controlling the mix where the process is continuous, according to Mr. J. G. Ahlers. Mechanical operations and the conditions at hand are the controlling factors to be taken into consideration. In building construction, it is necessary to hoist the concrete, as it is practically all used at a point higher than where mixed. This also favors the batch mixer.

Maple Flooring Contract

One of the largest hardwood flooring contracts taken in the transbay district for some time was secured the past month by the Strable Hardwood Company of Oakland, when is was authorized to furnish from three to five carloads of the Wolverine brand of maple flooring for the new John Pruener warehouse at 22nd and Adeline streets, Oakland.

Stabilizing the Construction Industry

By R. C. MARSHALL, JR.*

CONSIDERING the purchasing power of the dollar today, as compared with 1913, building costs are not now prohibitive, but we are menaced by dangerous inflation. According to our index figures, the cost of building in the spring of 1920 was about 55 points higher than it is now (1913 taken as 100, 1920 was 255 and 1923 is 200) and building material prices were about 90 points higher, index figures on a 1913 base of 100 being 300 for 1920 and 210 for 1923. While building trade wages are at the moment about 75 points nigher than in 1913, they are not quite so high as they were in the latter part of 1920 and first part of 1921, but as labor efficiency falls off with increasing wage rates, labor production costs are rapidly mounting. The trend is unmistakably toward heavy increase in the total of building costs. The building permits issued in 200 cities in March amounted to $397,000,000, an increase of about 50 per cent over March, 1922, and the volume of building now in progress dwarfs any previous records in the history of the country, being almost 75 per cent greater than at any other time.

We are undertaking this enormous expansion of building with a stationary if not shrinking labor supply, on account of the immigration restriction law, and with the material industries of the country practically at the limit of their productive capacity. There can be only one outcome of such a situation if it is allowed to persist. The cost of materials and labor will presently rise to prohibitive levels, and our enormous construction program will collapse with a crash. If history is a good guide, it will take two or three years to recover, in spite of the fact that we are still at least a year's normal building behind the housing requirements of the country.

It is commonplace to say that all industry is vitally related to construction. If this industry tumbles from an extraordinary peak of activity to a depth of extraordinary depression, the general results will be reflected in all the country's industry and commerce.

To us who are so situated as to see the handwriting on the wall, there was no other choice than to attempt consciously to check the rise in building costs before they become prohibitive and destructive. We calculate that if all building projects for speculative selling can be deferred for a few months, and also all other large construction projects that are not of an emergency nature, we shall effect something of an equilibrium between supply and demand in the con-

* Director Associated General Contractors of America.

SAN FRANCISCO PUBLIC LIBRARY

struction industry, and will be able to stabilize costs at present or, possibly, slightly lower levels. If we do this we think that about 18 months of exceptional prosperity can be counted on in the construction trades, and that from then on the building industry will be able to gradually and comfortably meet the new construction needs of the country. As we see it, the question simply is—Will the country "go easy" on new building for two or three months and thereby insure itself a year and a half or more of exceptionally good business, without a terminal explosion resulting in widespread ruin and distress; or will it insist on plunging into a mad carnival of rising costs and supernormal building volume, which is sure to blow up in a few months and to be followed by two or three years of ruinous prostration?

This attempt to prevent a giddy cost peak from which there will be no way down but by a suicidal leap, is something new in what you might call applied economics. It may not succeed, and there may be untoward developments, but we are convinced that nothing that may come from this conscious effort to prevent disaster will be as bad as the disaster itself. Doubtless the restrictive policy may work hardship on many industrial plants and some workers, but, of course, in a general program of this kind, it is impossible to do individual justice to thousands and tens of thousands of cases involved. We can only hope to attain the general good, and that present individual sacrifices will be more than offset in the compensating benefits that will ensue. So far the appeal for the deferment of construction wherever possible has been generally responded to. Hundreds of millions of dollars of projects have been held up, and the present prospect is bright that we shall be able to flatten out the ominous impending peak.

Cement Making Pictured In New Film

Much of the unusual equipment involved in making cement is interestingly illustrated in a two reel moving picture called "The Story of the Manufacture of Portland Cement," just released for general showing.

Starting with views of one of the large plants in which the country's cement is made, the film pictures in a non-technical way the essential steps in transforming thousands of tons of raw materials into Portland cement. Scenes taken at a number of plants are included.

From the moment that a great blast breaks loose a cliff of limestone in the quarry to the time when the finished cement goes into storage in big concrete bins, the process of manufacture is almost entirely mechanical — otherwise present day outputs would be impossible.

This film can now be secured without charge by interested organizations through any office of the Portland Cement Association, or from Association headquarters at 111 W. Washington street, Chicago.

Increasing Use of Electricity

The increase in the general use of electricity throughout the State in the past few years is evident, according to the discussion at the annual convention of the Pacific Coast Electrical Association recently held. Utilization of electric energy for domestic and commercial cooking and heating, as well as for power purposes, according to the reports, has advanced rapidly.

As would be expected, the increase in the general use of electricity is greatest in California, where development of hydro-electric power has assumed vast proportion. The mountain streams have been harnessed and the rushing waters utilized for the generation of electric energy, thus making possible the more general use of this most desirable fuel.

The present increase in demand is well indicated by figures just submitted by the office of W. G. Vincent, vice-president and executive engineer of the Pacific Gas and Electric Company, which show that during the past month 3411 new consumers were added to that company's lines, and for the first five months of the year there were 18,747 new consumers added.

Westinghouse Electrical Supply Catalog

The Westinghouse Supply Catalogue, generally regarded as an encyclopedia of things electrical, is now being distributed. This issue for 1923-24 replaces and supercedes all catalogues issued heretofore on electrical supplies by the company.

In appearance the new catalogue does not differ greatly from its predecessor. The former editions have proved so useful and satisfactory that no essential features were altered, the improvements being largely a matter of detail and refinement.

Appreciating the importance of accessibility to the specific information wanted, the utmost care was used to meet this requisite. The catalogue is indexed according to subjects and to sections, and also has a style number and a thumb index. In addition, a new feature—a classified index—has been added to the introductory section under the title "How this catalogue serves." Here is listed apparatus of particular interest to Central Stations, Electric Railways, Industrial Plants, Mines, Contractor-Dealers, and Architects.

With the Engineers

Architecture and Engineering

THE relation in an architect's practice which the two elements, construction and design, shall bear to one another, has always been somewhat confusing. It has not been an infrequent occurrence to find men who were extremely clever at designing, and yet who could not carry out their designs without the greatest assistance from others specializing in construction. While the scheme of our business life today requires a certain amount of specialization in any work, it is unfortunate if this specialization in architecture is carried to the extreme of ignorance of allied subjects, the designer knowing only how to design.

Such narrowness must work against the development of sound architectural forms and motives. Steel, to name the modern material of the widest use, has created opportunities for great originality in design, but what designer can make the most of these opportunities if he doesn't know the material, its strength and peculiarities? Such a one must continue the use of old forms in a manner that is now illogical.

A better knowledge of structural material than is now possessed by the average will also increase the opportunities for architectural design. It is most unfortunate that subjects which are crying out for esthetic handling, subjects such as bridges, factories, and warehouses, are so often handled by engineers alone. In this way many latent possibilities where our everyday surroundings might be improved are totally lost. These problems are not confided to the architect, largely because the public's opinion of him and of his ability to handle them is not very high. It, therefore, behooves the profession to correct this condition and bring within the scope of its work these problems now largely given to the engineer.

While architecture has been defined as "the art of building beautifully," it ought to be amplified by the phrase "and constructing soundly," for though the esthetic effect resulting from a design is of great importance, the client is interested primarily in the actual structure, and its permanence and soundness will be the most important considerations to him. And, from a business point of view, the pleasing of the client is an important factor in a practice. The architect is employed not merely to prepare drawings (except in very unusual cases), but he is to produce a building of a thoroughly sound character and, unfortunately, in many cases the necessary knowledge is lacking. Of course, on large work consulting engineers may and should be called in to work in conjunction with the architect; but even then the best results cannot be obtained unless the latter can grasp the engineer's point of view and discuss with him the problems that arise.

In the smaller work very often the special structural knowledge is supplied by the manufacturers of building materials, and here again the result cannot be the best unless the architect possess enough knowledge to check the work. Otherwise he is unable to know whether too much or too little material has been used; there may be a gross and expensive waste or the amount used may be dangerously small. Yet the responsibility of the result lies with the architect.

To be sure, it cannot be expected that the architect shall have the special education that is necessary for great engineering feats. The variety of subjects his profession requires him to understand and the scope of his activities preclude any highly cultivated knowledge along that special line.

Perhaps the most nearly ideal substitute for the architect-engineer is a partnership including an architectural engineer. With this scheme the constant contact with the work of the office will result in a sympathy and understanding of purpose which is essential to the best solution of problems, and which is not possible when outside assistance is called upon for special cases. However, such a specialized partnership is not practicable in the small practice, and so we again face the fact that the architect should have a better knowledge of building construction than is generally the case today.—Exchange.

Better Building Show

A "Better Building Show" was held June 4 to 9, inclusive, at the Metropolitan building exhibit in the Metropolitan building, Los Angeles. Special displays were made and all the exhibitors had representatives on hand to meet the public. Over $1000 worth of cash prizes were given away by Miss Schmidt, manager of the exhibit. Friday, June 8th, was observed as Architects' day.

O'Shaughnessy Dam Dedicated

DEDICATION ceremonies of the O'Shaughnessy Dam, with a storage capacity of 66,000,000,000 gallons of water and costing $6,114,648.86, were held at Hetch Hetchy July 7th.

The dam, designed by Mr. M. M. O'Shaughnessy, city engineer of San Francisco, is one of the wonders of the engineering world and the biggest undertaking connected with the Hetch Hetchy project. It is one of the units of the great system being built to supply San Francisco with water and electric power.

The ceremonial program consisted of speeches by Mr. W. H. Wattis, president of the Utah Construction Company, who delivered the dam over to President Timothy A. Reardon of the San Francisco Board of Public Works. Wattis told of the accomplishment of the structure,step by step, from the time the contract was awarded his company, July 8, 1914.

President Reardon accepted the dam on behalf of the city and county of San Francisco in a formal manner, and then Mayor Rolph spoke at length, reviewing briefly the history of the Hetch Hetchy project and its ultimate bearing on the development of San Francisco.

Mayor Rolph was followed by City Engineer M. M. C'Shaughnessy, who minutely outlined the work done from the beginning of the undertaking until the acceptance of the dam by the city and county.

Mr. O'Shaughnessy called attention to the fact that in order to accomplish the work it was necessary to build four auxiliary dams, one of them on the upstream side to divert the main river into the tunnel, one on the downstream side 1000 feet below the dam to stop flood water from backing into the excavation, and as the excavation progressed it was necessary to build two auxiliary slender dams.

Speaking of the employees and camps, the engineer said everything possible had been done for the comfort of the men and that as many as 500 men were employed at one time, "and a great many lives were lost through accidents incidental to this dangerous work."

Getting down to figures, Mr. O'Shaughnessy said:

"The whole floor of the valley was entirely cleared of timber in two operations, the first in 1915, and the second in 1921-22.

"The present dam, built in the shape of an arch, with a 700-foot radius, at the bottom of the foundation is at an elevation of 3386 feet.

"The bottom valve elevation is 3508; initial crest elevation, 3726; length of crest, 600 feet; storage capacity, 66,000,000,000 gallons; drainage area, 294,000 acres; reservoir area, 150 acres; total concrete volume, 398,967 cubic yards; excavation, 207,992 cubic yards.

"The entire contract estimate of the Utah Construction Company is $6,114,648.86.

"The contract price for valves made in San Francisco, Philadelphia and Boston is $532,707.48, which makes a total of $6,647,356.34.

"The Ashokan reservoir of the city of New York, practically double the capacity of the Hetch Hetchy, has cost $32,000,000, which, reduced proportionately, would make a cost of $16,000,000 for the same volume as Hetch Hetchy. The Ashokan, however, is low level, with no power potentialities, so it is my thought that Hetch Hetchy will be very much appreciated by our future inhabitants of San Francisco who have been struggling for fifty years to obtain a municipal water supply.

"The construction of a dam of this magnitude and the occupation of this valley for a reservoir were forced on the city of San Francisco by interests antagonistic to human welfare.

"Practically $300,000 was spent between 1910 and 1912 preparing engineering reports on all streams in California from Mount Shasta to Merced to defend the city's rights, which were about to be abrogated to the use of this valley. The bill has been high, but the prize is worth the cost.

"The foundation will enable the dam to be carried in the future to a height 85 feet greater, and which will increase its storage capacity about 50 per cent. This acts as a declaration of a definite policy on the part of the city of San Francisco to carry on and build in the future, at a later date, a very much higher dam.

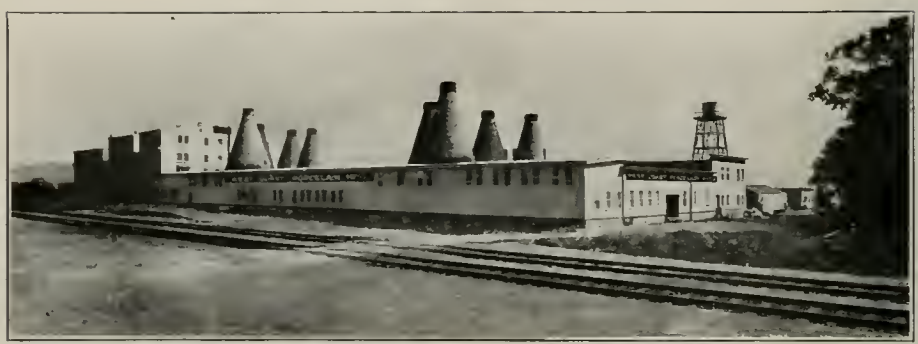
"The great present problem is to get a market for our existing power units, so that it will bring in a revenue and help to pay interest on the bonded indebtedness, and secondly to provide money to complete the aqueduct between the Moccasin Creek power-house and Irvington."

Passing of Eminent Engineer

Major H. H. Wadsworth, for the last four years a consulting engineer, with offices in the Holbrook building, San Francisco, died in St. Luke's Hospital July 7th after a short illness.

For fourteen years he held the position of assistant engineer with the California debris commission. During this period he had an active part in the preparation of plans for the control of flood waters in the Sacramento and San Joaquin rivers.

Major Wadsworth was a member of the Engineers' Club and vice-president of the San Francisco Chapter of the American Society of Civil Engineers.



PLANT OF WEST COAST PORCELAIN MANUFACTURERS AT MILLBRAE, CALIFORNIA, SHOWING THREE NEWLY ERECTED KILNS.

West Coast Porcelain Manufacturers Increase Production Facilities

WITH the completion of three new kilns at Millbrae, California, the West Coast Porcelain Manufacturers have practically doubled their production capacity.

This expansion was made necessary by the demand which has developed for West Coast products in the Pacific Coast and Rocky Mountain States and in the Orient.

Every unit in this plant is working at full capacity in an endeavor to keep up with the orders already placed. Present indications are that further expansion will shortly be necessary to cope with the steadily growing volume of business.

Probably one of the main reasons for the rapid growth of the West Coast Porcelain Manufacturers is their insistence upon the maintainence of extremely high standards in materials and workmanship. Thus, the confidence of the trade has been secured and the quality of West Coast plumbing fixtures is recognized throughout the territory served.

The architects in the west have satisfied themselves of the advantages of specifying products made on the Pacific Coast, and the saving in time of delivery, reduced freight rates, and a more readily accessible source of supply has proved of exceptional benefit during the extraordinary building activities of the past two years.

Hauser Company in New Factory

The Hauser Window Company has moved to its new factory at 1362-66-70 Harrison street, San Francisco. Besides greatly improved manufacturing facilities, the company now enjoys spacious offices and show rooms and architects will find it to their advantage to visit this plant and inspect models of the various types of windows produced by the Hauser Company. Hauser windows are known from one end of the Pacific Coast to the other and are to be found in the best school buildings, apartment houses and residences. Besides Hauser patent reversable window devices Mr. Hauser is also the inventor and manufacturer of various multiple and mechanical operating devices.

In New Quarters

The F. W. Wentworth Company has moved to 39 Second street, San Francisco. Their old location was at 533 Market street.

The Randall Control and Hydrometric Corporation has moved its San Francisco office from 54 Natoma street to 265A Minna street. The new phone number is Douglas 2397.

The Williams Radiator Company announces the removal of the San Francisco branch office from the Monadnock building to 571 Mission street.

The C. F. Weber Company (office furniture branch) is now located at Second and Mission streets, San Francisco.

Mr. Raphael Zelinsky, painter and decorator, announces the removal of his office to Rooms 411 and 412, Williams Building, 693 Mission street, San Francisco, with Oakland office, as formerly, at 351 Twelfth street.

Subway for San Francisco

The State Board of Harbor Commissioners has submitted a proposal to the San Francisco supervisors seeking their co-operation in the construction of a subway under the railroad tracks in the loop fronting the Ferry building. The cost of the subway is estimated at $424,000.

Standardization

FEW persons realize the tremendous economic importance of industrial standardization and its effect on the construction industry. The American Engineering Standards Committee is obtaining noteworthy results in standardizing specifications, the 16 reasons for standardization given below being the result of its study:

1. Stabilizes production and employment, since it makes it safe for the manufacturer to accumulate stock during periods of slack orders, which he cannot safely do with an unstandardized product.

2. Reduces selling cost. This is generally overlooked. Possibilities of reduced costs are generally even greater in distribution than in production.

3. It enables buyer and seller to speak the same language, and makes it possible to compel competitive sellers to do likewise.

4. In thus putting tenders on an easily comparable basis, it promotes fairness in competition, both in domestic and in foreign trade.

5. It lowers unit costs to the public by making mass production possible, as has been so strikingly shown in the unification of incandescent lamps and automobiles.

6. By simplifying the carrying of stocks, it makes deliveries quicker and prices lower.

7. It decreases litigation and other factors tending to disorganize industry, the burden of which ultimately falls upon the public.

8. It eliminates indecision both in production and utilization—a prolific cause of inefficiency and waste.

9. By concentrating on fewer lines, it enables more thought and energy to be put into designs, so that they will be more efficient and economical.

10. By bringing out the need of new facts in order to determine what is best, and to secure agreement on moot questions, it acts as a powerful stimulus to research and development—and it is thus in decided contrast to crystalization resulting from fixity of mental attitude.

11. It is one of the principal means of getting the results of research and development into actual use in the industries.

12. It helps to eliminate practices which are merely the result of accident or tradition, and which impede development.

13. By concentration on essentials, and the essentials, and the consequent suppression of confusing elements intended merely for sales effect, it helps to base competition squarely upon efficiency in production and distribution and upon intrinsic merit of product.

14. Standardization is increasingly important for the maintenance and development of foreign trade. There is strategy in nationally recognized "American" specifications.

15. The efficiency of competing countries, increasing through national standardization programs, is liable to transfer competition from foreign markets to our own shores.

16. Joint effort in bringing about standardization within and between industries almost invariably leads to better understanding and to beneficial co-operation along other lines—a step toward the integration of our industries.

The Numbering of Houses

Great improvements have been effected in recent years in the numbering of houses, and it is generally possible to find the house one wants without delay. In the more scattered towns of America, house numbers are placed at any point that suits the personal tastes of the occupier, and much inconvenience is caused. It is reported that an entirely new method has been introduced, which consists in placing the number on the side of the kerb immediately opposite the house. The kerbing is first cleaned thoroughly with a stiff steel brush and then 6-inch figures are stenciled on with lampblack and oil, which it is expected will last for years. There are two questions which one would like answered, namely: What is done in wet weather when the kerbs are freely spattered with mud and the numbers hidden? And how are the numbers distinguishable at night?—Australia Building.

Engineer to Develop Property

Announcement is made that plans have been completed for the development of a tract of land, approximating 25,000 acres, in Monterey County, near Carmel, by Mr. Peter R. Gadd, civil and contracting engineer of Sacramento. Mr. Gadd is employed by Mr. George Gordon Moore, New York financier, who is the owner, who plans to develop all of the property for his own use, according to Gadd, and the land thus developed will be devoted to alfalfa, dairying and stock raising.

The engineer's contract provides for the construction of eight miles of highway into the property, and irrigation ditches, pumping plants and other works incidental to development of the property. The construction of buildings costing $150,000 is contemplated.

Detroit Steel Products Company Builds Coast Factory

Of particular interest to architects on the Pacific Coast is the announcement by Mr. Victor F. Dewey, President of the Detroit Steel Products Company, of the establishment of a factory in Oakland, for the manufacture of Fenestra Steel Window Walls.

On a recent trip to the coast, Mr. Dewey selected a plot of ground comprising a city block at Emeryville, and construction of the first unit, a model factory building of concrete and steel, is being completed under the direction of Mr. H. F. Wathen, Pacific Coast manager of the Fenestra Construction Company, a subsidiary of the Detroit Steel Products Company, which specializes on steel sash erection work. Architect Washington Miller of San Francisco prepared the plans.

Located on a spur of the Southern Pacific Railroad, and with ample facilities for the receipt of raw materials and the dispatch of finished product, both by rail and by water, the Detroit Steel Products Company will be in a particularly advantageous position to serve its rapidly growing business in the Pacific Coast region and the Orient.

Mr. Burleigh A. Lum has been appointed manager, in charge of the Pacific Coast Sales of the Company, with offices at 251 Kearny street, San Francisco. He was formerly director of Western agents for the company, and as such, has a wide acquaintance among architects in the middle west. His offices were formerly at Kansas City.

The western organization of the Detroit Steel Products Company is an extensive one. Mr. W. C. Lea has been for five years representing the Fenestra interests at Los Angeles, and other representatives are: Messrs. Geo. C. Weare, San Diego; S. W. R. Dally, Seattle, Washington; R. H. Hoskins, Spokane, Washington; and P. L. Cherry Company, Portland, Oregon.

Officers of the Detroit Steel Products Company are Messrs. John G. Rumney, Chairman of the Board; Victor F. Dewey, President and General Manager; M. P. Rumney and H. F. Wardwell, Vice-Presidents; and E. R. Ailes, Secretary and Treasurer. The Company is capitalized at $3,500,000, and does an annual business of $10,000,000.

Dierssen Moves To New Quarters

D. Dierssen Company of San Francisco have just moved to larger quarters at 20 Second street. The big success this company has enjoyed during the past year has made it necessary for them to greatly enlarge their sales organization and their quarters. The company is Pacific Coast distributor for the Solar Illuminating Company of Chicago, Ill.

A wide range of types of Solar lighting fixtures from plain commercial to ornamental strap iron design is carried in stock in San Francisco.

Among the recent installations of Solar lighting fixtures were the Standard Oil building, Walton N. Moore building, Balfour building, Royal Insurance building and Cunard building.

A new booklet showing the complete line has just been printed and will gladly be sent upon request.

Seventy Schools Equipped with Birchfield Boilers

The St. Edwards School for boys at Marymont is the seventieth school to select Birchfield boilers for heating. One of the largest boilers the Birchfield Company has manufactured, weighing approximately 15,000 pounds, was delivered last month for installation in that school.

The Vulcan Iron Works, Limited, Vancouver, B. C., having exclusive manufacturing and selling rights of Birchfield steel boilers for British Columbia report having taken orders for boilers to be installed in the Couglan and Doilar buildings, two large office structures being erected in Vancouver, B. C.

The Birchfield Boiler Company reports having been awarded a contract by the Shell Company of California for manufacturing and erecting a new 80,000-gallon riveted storage tank at their Center street plant, Tacoma, also two 25,000-gallon electric welded storage tanks for out-of-town shipment.

Atlas Company Expands

The Atlas Portland Cement Company (of Kansas) has been incorporated to acquire the property of the Western States Portland Cement Company at Independence, Kansas.

The well-known quality and uniformity of 'Cowboy' Brand which has heretofore been manufactured in Independence, is already established. The Atlas Company will link with this quality the same dependable service which has been maintained for over a quarter of a century, which has resulted in their permanent clientele.

Engineer Resigns

Mr. J. J. Rosedale, for the past eight and one-half years chief construction engineer for the Department of Safety of the Industrial Accident Commission of the State of California, recently tendered his resignation, and has established a safety service bureau in the Sharon building, San Francisco.

Buttonlath

— written into the specifications means that the finished job will be a source of pride to the architect and the builder, and a lasting satisfaction to the owner.

There's the "Button"

Buttonlath Manufacturing Co.
207 Balboa Building San Francisco

KENNEDY

The Standard Valve

The test of valve quality is the length of time the valve continues to render the most efficient service without giving trouble or entailing expense. There are Kennedy Valves of the long-time kind all over the United States and Canada, doing good work in every variety of valve service.

You can be sure that every Kennedy Valve you install will be permanently satisfactory in every way. The Kennedy Catalog explains the details of design and construction that assure easy operation, low repair cost, negligible attendance and unusual durability. Send for a copy and use it to help make a selection of Kennedy Valves for trial.

250

THE KENNEDY VALVE MFG. CO. ELMIRA, N.Y.

Branches and Supply Depots:
BOSTON, 47 India Street
NEW YORK, 95 John Street
SAN FRANCISCO, 23-25 Minna Street
CHICAGO, 228 N. Jefferson Street
Sales Offices:
Salt Lake City, Seattle, El Paso

California Wins 1924 Engineers' Convention

BY unanimous vote the Norfolk convention, American Association of Engineers, selected California as the place for holding the 1924 national convention.

While the matter of selecting the city is contingent upon executing certain guarantees to national headquarters, the convention was assured that San Francisco was prepared to extend a welcome such as no other convention has received.

Telegraphic invitations were received at Norfolk from Mayor Rolph, City Engineer O'Shaughnessy and a dozen or more California organizations. Oakland members of the San Francisco Chapter asked that one afternoon be allotted to the transbay cities for sight-seeing trips and social activities.

This act on the part of Oakland members presents a splendid suggestion which if followed out by other California chapters would enable the delegates to see the entire State of California. The delegates could come by way of Portland and on their way south stop as guests of Dunsmuir Chapter and see the Pit river project, after which proceed to Sacramento where that chapter could take them into the Sierras, possibly by way of Placerville and Lake Tahoe, then back through the Truckee-Auburn route to enable them to view the extensive engineering work en route. After the convention is over in San Francisco arrangements could be made to visit Fresno Chapter and the Hetch-Hetchy, thence by train to call upon the Southern California chapters.

The Pacific Coast delegation which made the trip to Norfolk consisted of Messrs. Herbert C. Ferry, director, District No. 2; G. M. Butler, director District No. 1; H. Z. Osborne, president Los Angeles Chapter; A. C. Black, president San Diego Chapter; L. A. Caine, president Honolulu Chapter; J. M. Buswell, secretary Fresno Chapter; Capt. A. J. Capron, secretary San Francisco Chapter, and Herman Wagner, delegate Southwest District.

The trip was made via Los Angeles, Tucson, New Orleans, Atlanta and Norfolk. A portion of the delegation stopped at the Grand Canyon, joining again at New Orleans.

Becomes Sales Manager

Mr. E. M. Breed, for several years assistant manager of sales for the Pelton Water Wheel Company, has been appointed sales manager for the company, with headquarters in San Francisco. Mr. Breed has had a wide experience in hydro-electric work, having been connected with the Pelton Water Wheel Company in various capacities for the past fifteen years.

S. S. LEVIATHAN

Walker & Gillette, *Architects* — Gibbs Bros., *Engineers*

S. S. Leviathan

Concealed lighting from coves is used throughout the main rooms of the new S. S. Leviathan. Unusual results have been attained through the use of specially designed

Frink Reflectors
with
Frink Linolite Lamps

Rear-Admiral William S. Benson comments as follows on the effect:

"Many similar points could be mentioned concerning the various other rooms, but one must not pass without inviting attention to the arrangement of the dining salon, where the center dome, some thirty feet above, presents one uniform, glowing surface, the light apparently coming from nowhere."

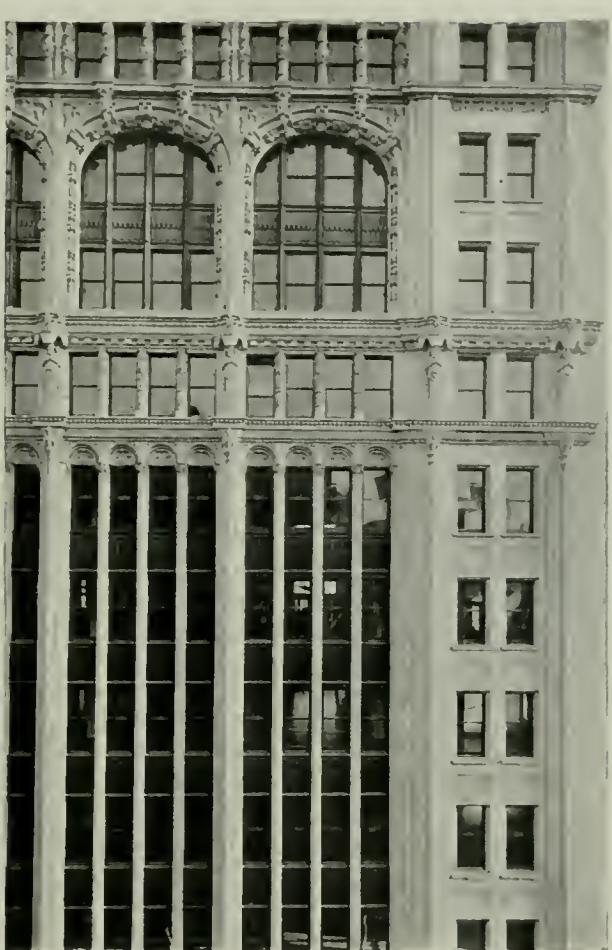
I. P. FRINK, Inc.

SAN FRANCISCO, CAL.,
77 O'Farrell Street
24th Street and 10th Avenue,
New York

Chicago, Ill.
Monadnock Bldg.
Boston, Mass.
161 Summer St.
Detroit, Mich.
325 State St.
Cleveland, Ohio
992 The Arcade
Buffalo, N. Y.
310 Mutual Life Bldg.
St. Louis, Mo.
1415 Pine Street
Seattle, Wash.
609 Seaboard Bldg.
Philadelphia, Pa.
Franklin Trust Bldg.
Cincinnati, Ohio
601 Second Nat'l. Bank Bldg.
Louisville, Ky.
415 West Main St.
Birmingham, Ala.
426 Jefferson Co. Bank Bldg.
Atlanta, Ga.
1526 Candler Bldg.

Canada
Associated with Robert Mitchell Co. Ltd.
64 Belair Avenue, Montreal

For the Monumental Building



AS the logical facing material for the steel frame skyscraper terra cotta is unsurpassed by any existing material.

For appropriately clothing this form of construction, terra cotta meets every requirement of scale demanded by sincere organic design. To the monumental structure terra cotta also brings possibilities in color for emphasizing effects of scale, form and proportion which are presented by no other enduring medium.

Literature pertaining to color and proper construction in terra cotta for permanence will be sent on request. Address National Terra Cotta Society, 19 West 44th Street, New York City.

DETAIL of terra cotta facade, Emmett Bldg., Madison Avenue and 29th Street, New York City.

J. Stewart Barney and Stockton B. Colt, Architects

TERRA COTTA

Permanent Beautiful Profitable

When writing to Advertisers please mention this magazine.

New Contract Form Prepared for Electrical Men

THE contract which the electrical contractor presents to the home owner whose house he intends to wire has long been a rather clumsy affair. There have been as many styles of forms for these contract blanks as there have been men engaged in the business. Every electrical contractor has had rather bitter experiences with these forms, often finding that they could not be enforced at court.

Many efforts have been made by individual contractors to establish a form which would be flexible enough to make it usable in all cases and which at the same time would not be too complicated or involved. The average contractor does not want to be bothered with a mass of detail to be observed while making out a contract, and yet he wants to have definite specifications for the job, written into the contract which is to be signed by him and the house owner.

In the past a number of contractors have not had the opportunity to organize a plan for the formation of a contract blank, and have as a result often used forms which were vague and of no real value to the contractor or the person owning the house. These forms have often been of such a nature that they had no legal standing, and provided no protection to either party to the agreement.

In an endeavor to correct some of the evils of the haphazard contract form, the Los Angeles branch of the California State Contractor-Dealers' Association worked out a form which relieves the contractor from any doubt as to the validity of the contract. In drawing up the form, the association secured the services of Earle E. Moss, a Los Angeles attorney, in order that the form might be legally correct in every detail.

The face of the contract is made up to facilitate the listing of the items that were considered in making out the estimate sheet. The price of the job is listed on the sheet, thus giving the builder of the structure a signed statement of the cost to him, and when this sheet is signed by both the contractor and the builder it is a binding agreement between them.

The arrangement of the sheet gives the contractor an additional check on his estimating figures, as he transfers the several items from that sheet to the contract form before presenting his estimate to the builder. Thus should he have failed to figure any item while making the estimate, this will show up while making the entries on the contract as one upon which no price has been placed. The contract also stipulates that the price quoted includes only those items specifically mentioned, thus giving still greater protection to the contractor.

On the reverse side of the contract all of the necessary terms and conditions to make the contract binding are printed. The stipulations are as follows:

"All work to be done in a good and workmanlike manner, and in accordance with the ordinances, if any there be, of the city in which it is to be performed, and with the laws of the State of California, and when not covered by such ordinance and laws the rules of the National Board of Fire Underwriters shall apply.

"Should there arise any condition to necessarily hinder carrying on the work as specified and ordered, and over which the electrical contractor has no control, the electrical contractor is at once entitled to and must be paid on demand an amount not less than 80 per cent of the estimated cost of work that has been performed and material furnished, and that the balance of the estimated cost of work performed and material furnished must be paid within sixty days from date of notice by the electrical contractor of his inability to further proceed with the work.

"In the event of the failure to pay any installment or installments on the contract price herein provided for, when due, then the electrical contractor at his option—which option shall continue during all the time of such default—may remove from the premises any materials or fixtures that shall or may have been installed therein by him or delivered by him to the premises, and may apply the value of such materials or fixtures so removed on account of any indebtedness due him on the contract. The option herein provided for shall be in addition to any and all other remedies the electrical contractor may have to enforce his contract, either in law or equity.

"The electrical contractor is not familiar with the condition of the legal title to the property covered by this agreement, and if at the time of the execution of this agreement or at any time prior to the actual commencement of work by the electrical contractor under this contract, it should appear that there is a trust deed, mortgage or judgment lien upon said property, or said property is subject to a first mortgage or first deed of trust, then and in that event the electrical contractor may, at his option, refuse to further proceed with the work, and the electrical contractor shall in no way be liable for any damages whatsoever by reason of such refusal. In the event of the electrical contractor shall abandon the work for either of the reasons above stated, or in the event of loss

The residence of Mr. John F. Mauro, 2627 East Seventh Avenue, Denver. Messrs. G. W. & H. W. Huntington, Denver, were the Architects. Medusa Waterproofed White Cement used in the stucco for this interesting home

Medusa Waterproofed Cement Backs Up Your Specification Exactly 100%

MEDUSA Waterproofed Cement contains exactly the correct proportions of portland cement and waterproofing, added together and thoroughly ground in at the mill during process of manufacture. By specifying Medusa Waterproofed Cement for concrete work in which complete resistance to dampness is to be a feature, the Architect may always be sure of attaining *permanently* the desired result.

For stucco, precast building trim, lawn and garden furniture, and all ornamental concrete work—Medusa *Waterproofed* White Cement.

For basement and foundation walls and floors, warehouse, power-plant and industrial construction, pits, sumps, etc.—Medusa *Waterproofed* Gray Cement.

For use at distant points, where freight rates on waterproofed cement would be excessive, we furnish Medusa Waterproofing, concentrated in either Powder or Paste, for adding to any standard portland cement while mixing, in the amount of 2 pounds Waterproofing to each sack of cement.

You will find "Medusa" specifications in "Sweet's," Pages 94-95 and 316-318. We shall be pleased to send interesting Bulletins, containing exact specifications and other important data, upon request.

THE SANDUSKY CEMENT CO., Dept. P, Cleveland, Ohio

Medusa Stainless White Cement—Plain and Waterproofed—and Medusa Waterproofing are carried in stock and sold by leading building-supply dealers in California, Oregon and Washington.

MEDUSA
WATERPROOFED
WHITE CEMENT

by fire, the price mentioned herein for the completed work shall be disregarded, and payment in full for all work done to that time shall be immediately due and payable, the value of such uncompleted work to be determined on the basis of the cost of labor and material to the electrical contractor plus 25 per cent of such cost.

"If suit be commenced or other legal proceedings be taken to enforce the payment of any amount due under this contract, a sum equal to 25 per cent of the amount of this contract shall be added to such amount for attorney's fees.

"Payment for roughing-in work or allowing later work to proceed shall constitute an acceptance of the roughing-in work as satisfactory, and no claim shall be made against the electrical contractor for damages or errors after the work has been passed by the city inspector. 'Roughing-in' work includes only work necessary to pass 'Roughing-in' inspection under the ordinance, laws or rules governing the work. The electrical contractor shall not be responsible for damage to fixtures after they are installed. The electrical contractor shall not be held liable for any loss, damage or delays occasioned by fires, strikes or other causes beyond his control.

"Any change in the location of an outlet from that shown on plans or as originally agreed upon shall constitute an extra outlet, payment for which shall be made on a time and material basis.

"All appliances, equipment, fixtures, switches, and other material or property of any kind or character whatsoever, which may be removed from the structure upon which they have been placed by the contractor under this agreement, without the destruction of any wall, floor or foundation, shall not be considered as affixed to the said premises, and shall remain the property of the contractor until full payment for same shall have been made. All payments made under this agreement shall be applied first to the payment for labor, and secondly to the payment for material affixed to said premises, and the remainder to the payment for fixtures, appliances, equipment, switches and other property furnished or owned by the contractor."

The contract form has been adopted by several contractors in Los Angeles already, and the branch of the California State Contractor - Dealers' Association in that city is considering adopting the form as a standard one to be sponsored for use by association members. The form has not been copyrighted, and can be used by any contractor.

ES
PRODUCTS

ES ELEVATOR SIGNAL SYSTEMS
Complete Flashlight Signal
Flashlight Annunciator Signal
Department Store Signal
Locdrop Annunciators

ES ELEVATOR SIGNAL ACCESSORIES
Night Service Annunciators
Mechanical Indicators
Starter's Call Back
Electric Position Indicator
Tell Tale Annunciator

ES ELEVATOR ACCESSORIES
Illuminated Thresholds
Directional Signs
Guide Lubricators
Travel Recorders
Stop Recorders
Reverse Phase Relays
Automatic Starting Signals
Safe Lift Calls
Telephones

ES ELEVATOR DOOR EQUIPMENT
Pneumatic Door Operators
Door Closers
Roller Bearing Hangers
Positive Electric Interlocks

ES ELECTRIC DUMBWAITERS

ES STEEL FIREPROOF THEATRE CURTAIN

ES ELECTRIC DOOR OPERATING MECHANISM
For bi-parting vertically sliding freight elevator doors.

Complete information on any of these items furnished on application

SEE SWEET'S ARCHITECTURAL

Elevator Supplies Company
INCORPORATED
Main Office and Works:—Hoboken, New Jersey

Cleveland 1039 Walnut Ave.
San Francisco 186 Fifth St.
Philadelphia 1714 Ludlow St.
St. Louis Railway Exchange Bldg.
Chicago 111 S. Jefferson St.

Cypress Trees 25,000 Years Old

FORTY centuries look down upon you," said Napoleon to his army, drawn up before the pyramids in Egypt. In the city of Washington today 200, perhaps 300, centuries look up at you. They look from the stumps of colossal cypress trees that grew thirty feet below the present level of the ground, away back in the geological past, when the world was still in the making—even before the age of the last advance of the ice sheet which once covered the northern part of the continent.

When the steam shovelers, who are excavating the great pit for the Walker Hotel on Connecticut avenue, began to strike stumps and logs of trees that were neither decayed nor fossilized, they thought they were out of luck, but when the numerous geologists and biologists of Washington heard of the discovery they considered that they were in luck. Groups of scientific men almost daily watch the progress of the excavation and marvel at the manner in which stumps, "knees," trunks, seeds, small branches and even leaves of the "wood eternal" have been preserved throughout a period of time that antedates the earliest historical records by at least 16,000 years.

The trees themselves may represent a thousand years. Their remains are found in three, more or less, distinct horizontal zones in what was at one time a swamp. Thus it appears that perhaps first one, then another, and finally a third generation of giant cypresses, probably at least 200 years old, followed each other as the swamp gradually filled up.

Scores of stumps were found in the excavation, which covers an area of about an acre and a half, that were not less than six feet in diameter. Many were found between six and fourteen feet, and the workmen assert that some of the fragments of stumps indicated that some of the trees growing in this ancient swamp were twenty-five feet thick, though these may have been clumps and not a single stump.

The fibre of the wood is well preserved and easily recognizable as that of cypress. Both sap wood and heart wood are preserved, and in some cases even the bark. When first taken out the wood is rather heavy, being completely saturated with water. It is firm and compact, although it saws easily and splits evenly. After a few days' exposure, the water evaporates and the wood becomes very dry and light, and cracks.

State Housing Act

The new California State Housing Act will be described in the August Architect and Engineer by Mr. Mark Cohn, secretary of the Housing Commission.

For Distinctive Hardwood Woodwork

-KOA-
HAWAIIAN MAHOGANY

A High Grade Hardwood, Medium Priced

Koa takes an elegant finish and is unusually highly figured.

When finished natural Koa shows exquisite high lights and shadows, or it can be stained as Mahogany often is. Koa comes in the same fine widths and high grade as Mahogany.

More Distinctive Than Gum

Koa can be finished in neutral tones like gum. It has, however, a more distinctive and aristocratic appearance than gum, and it is a far more durable wood. Koa improves with age.

Koa gives an aristocratic effect at a medium price.
Koa will express your individuality.

We have on hand a large stock of fine dry Koa, ready for immediate use.

WhiteBrothers

Hardwood Headquarters

NORTHERN CALIFORNIA DISTRIBUTORS

5th and Brannan Sts San Francisco

New Los Angeles Office for Quandt

A. Quandt & Sons announce the opening of new headquarters at 3317 Central avenue, Los Angeles. They have been operating in Southern California for the past three years, and these enlarged quarters are the result of a phenomenal increase in business. Their main office is at 374 Guerrero street, San Francisco. It was in the year 1882 that Mr. A. Quandt, still the active head, founded the firm in the city of Los Angeles, but in 1884 he moved to San Francisco, where the firm has been in continuous operation.

Today associated with him are his three sons, trained to carry on with greater energy and efficiency the best practice and ideals of painting service. A solid foundation has been laid by its founder with the fixed policy of maintaining the highest standards in the painting and decorating field.

This organization is now engaged in painting and decorating buildings of all classes, from the largest office buildings down to the smallest dwellings, and in all parts of the State. In San Francisco such buildings as the Federal Reserve Bank, W. P. Fuller & Company's building, Fitzhugh building, Walton N. Moore building, Southern Pacific building, and schoolhouses throughout the State bespeak the best testimony for the quality of their service.

To Distribute Du Pont Line

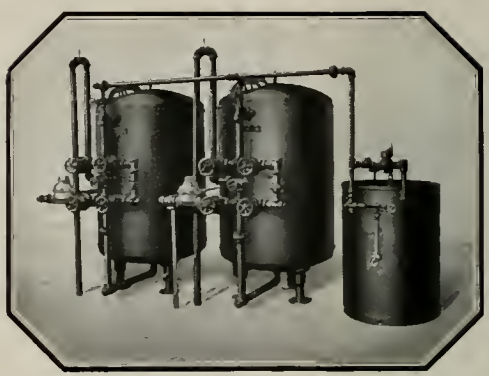
The Baker, Hamilton and Pacific Company, San Francisco, one of the oldest and largest hardware jobbers on the Pacific Coast, has become a distributor of the well-known du Pont paint and varnish lines.

The company has handled paint and varnish for a number of years under its own brand. Before changing to a nationally advertised material, thorough investigation was made of products, sales policies and reputation of goods. Du Pont paint and varnish was selected because of its well-known standards of quality and uniformity.

Mr. J. O. Greenwell, manager of the paint department of the Baker, Hamilton and Pacific Company, believes that with du Pont paint and varnish the company will be able to give better service and satisfaction to customers. Du Pont varnishes, formerly known to the Pacific Coast trade as the Chicago varnish line, have an established reputation among architects, contractors and consumers on the Pacific Coast.

Berkeley Federal Land Bank

The new Federal Land Bank in Berkeley, designed by Architect James W. Plachek, will be shown in detail in the August Architect and Engineer.



The Wayne Softener One of the Outstanding Economies of Industry

The important saving in the power house through the use of Wayne softened water is continually impressing itself more forcibly on the minds of industrial executives everywhere.

Soft water means a constant saving in power house operation. It means a great saving in coal, in equipment, and in labor.

These economies are so important, that managers in every industry are learning that they cannot afford to try to get along without soft water.

Industry generally is coming to a clear and positive recognition of the fact that a Wayne Softener will deliver 100 per cent soft water more rapidly, and at notably less cost.

The Wayne Softener is more efficient and more saving because its design is governed by a different and better principle. We will gladly supply complete information. Write today.

Wayne Tank & Pump Company
862 Canal Street, Ft. Wayne, Ind.

Wayne Tank & Pump Company of Canada, (Limited)
Toronto, Ontario, Canada

Division Offices in: Atlanta, Birmingham, Boston, Chicago, Cincinnati, Cleveland, Columbus, Dallas, Dayton, Des Moines, Detroit, Indianapolis, Jacksonville, Kansas City, Milwaukee, Minneapolis, New York Omaha, Peoria, Philadelphia, Pittsburgh, San Francisco, St. Louis and South Bend

Warehouses in: Philadelphia and San Francisco

An International Organization With Sales and Service Offices Everywhere

REG. U.S. TRADE MARK
Wayne
RAPID RATE
Water Softeners
For Household and Industrial Purposes

Draftsmen Plentiful in Los Angeles

Until the first of June it was practically impossible to find a draftsman open for employment in the City of Los Angeles. The Employment Committee of the Los Angeles Architectural Club, in order to overcome this state of affairs, communicated with a New York publication and advertised the local condition. With the first of June the condition of affairs seemed to change over night. Previous to that time there had been one or two men weekly applying at the Architectural Club for positions. From the first of June on there have been at least five men daily. The majority of these men are just out of school, but a sufficient number have left local offices to indicate a certain slackening in construction. Whereas in May almost every local architect desired additional help, in June very few had any need for men.

In its endeavor to stem the influx of Eastern draftsmen to Los Angeles, the Club sent each applicant a postal card informing him of the changed conditions. The concluding paragraph goes on to say:

"It is our belief that with fall there will be opportunities in Los Angeles for first class men; even at the present time a number of very excellent men could undoubtedly find attractive openings. While no position can be obtained unless the draftsman appears in person, we encourage no man to come at this time unless he be a bold individual, confident of his ability to prove it. Nothing is guaranteed."

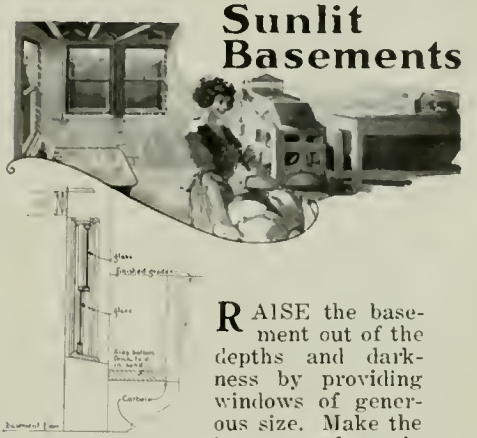
University Architectural Courses

The Architectural courses for the ensuing year at the University of Southern California, Los Angeles, have been carefully planned. Mr. Arthur C. Weatherhead, A. M., is the Professor of Architecture. Heating and ventilating classes will be under Mr. O. W. Ott, B. S., M. E., while Architectural Modeling instruction will be given by Mr. Casper Gruenfeld.

Among the lecturers are Messrs. Carleton M. Winslow, Myron Hunt, D. C. Allison, Donald Parkinson, Wm. A. Clarke, all prominent architects, Mr. Julian Garnsey, mural painter, and Chas. H. Cheney, city planner.

Women as Draftsmen

Architecture has many phases which appeal to women as workers in the making of homes. Apropos of the demand for draftsmen, which so suddenly ceased last month in Los Angeles, we have at hand a letter from Mr. Ralph Adams Cram, of Boston, to Mr. Myron Hunt of Los Angeles and Pasadena, asking if there is any possible opening for a "lady draftsman" in the offices of California architects.—California Southland.



Sunlit Basements

RAISE the basement out of the depths and darkness by providing windows of generous size. Make the home perfect in this respect and in other ways by (specifying) an abundance of good glazing.

Then specify "the best glass"—that of the American Window Glass Co. It is best because it is made from unvaryingly mixed batches, perfectly melted in the world's largest furnaces and of greater tensible strength, less wave and more luster by reason of improved methods of drawing and blowing. It is uniformly flat and of uniform thickness, acid washed before grading and then graded according to highest standards.

The contractor, the glazer, the frame manufacturer, the owner—all will thank you for specifying the glass of the American Window Glass Co. The elliptical mark on each box of the genuine means quality, the economy which goes with perfect packing and final results which can be obtained only by the use of "the best glass."

AMERICAN WINDOW GLASS CO. PITTSBURG, PA. U.S.A.

***Suggested Specifications for the* Best Window Glass**

"All the clear window glass glazed in this building shall be the AMERICAN WINDOW GLASS COMPANY'S make, or equal thereto."

Identification Label Each light of single strength or double strength "AA" or first quality window glass, as well as 16 oz. first and second quality Picture Glass of AMERICAN WINDOW GLASS COMPANY'S manufacture is labelled as shown herewith. This label identifies the quality.

"A" and "B" grades of Window Glass are not labelled, but have a quantity brand stamped on each original box.

AMERICAN WINDOW GLASS CO.

GENERAL OFFICES: PITTSBURGH, PA. The BEST Glass BRANCHES IN PRINCIPAL CITIES

Yards:
Tracy - Brentwood
Patterson - Newman
California

Phones:
Kearny 2073 - 2074

SANTA FE LUMBER CO.

A. J. RUSSELL, Mgr.

Wholesale and Retail

LUMBER

POLES AND PILING
OIL RIG AND SHIP TIMBERS
SAGINAW SPECIAL SHINGLES

FENCE POSTS
SIMPLEX SILOS
PAPEC ENSILAGE CUTTERS

16 California Street

San Francisco, Calif.

from tree to consumer

Pine and Redwood Lumber

SASH DOORS AND MILL WORK

SUNSET LUMBER COMPANY

MANUFACTURERS — WHOLESALE AND RETAIL

Main Office and Yards:

FIRST AND OAK STREETS, OAKLAND

Phone Oakland 1820

POPE & TALBOT

Manufacturers, Exporters and Dealers in

Lumber, Timber, Piles, Spars, Etc.

Office, Yards and Planing Mills

859-869 THIRD STREET, SAN FRANCISCO, CAL.

Mills: Port Gamble, Port Ludlow and Utsalady, Washington

Furnaces

AGENTS FOR

FRONT RANK All Steel Warm Air Furnaces

AND THE OLD RELIABLE

THATCHER Cast Iron Warm Air Furnaces

REGISTERS — FURNACE FITTINGS — REPAIRS

Montague Range and Furnace Company

327-329 JESSIE STREET Phone Garfield 1422 826-830 MISSION STREET

SAN FRANCISCO, CALIF.

When writing to Advertisers please mention this magazine.

International Competition of Designs for a Municipal Building *at* Montevideo, Uruguay

NOTICE is hereby given that the designs for a municipal building at Montevideo, Uruguay, will be received at the offices of the Consul General of Uruguay, Room 243, 17 Battery Place, New York City, until the 8th day of September 1923, at 3 P.M. All charges for packing and forwarding to Montevideo, Uruguay, will be for the account of the competitors.

FRANKLIN ADAMS, *Counselor*

WIRE NAILS FABRIC

WAREHOUSE AND MILL SHIPMENT

EDW. L. SOULE CO.
RIALTO BUILDING
SAN FRANCISCO

What Does It Mean to You

—when a manufacturer trade marks his product?

It means this—

He is maintaining QUALITY standards—standing squarely behind his products—protecting you and himself from inferior merchandise.

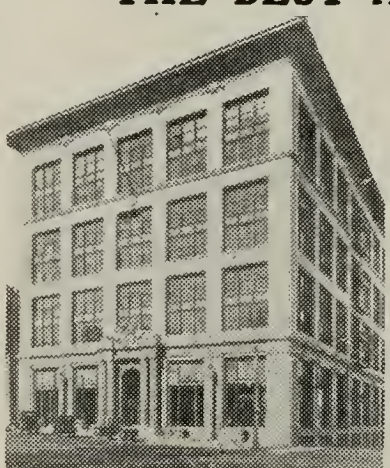
When specifying hardwood, say

"BATAAN" MAHOGANY

Lumber, Veneers, Plywood Panel
Hardwood Flooring

CADWALLADER-GIBSON COMPANY
5th and Brannan Streets
San Francisco, Calif.
Phones Douglas 1737-8

THE BEST ARGUMENT FOR ANY BUILDING



A fine building that hasn't the right kind of a heating boiler is like the giant of a man who puts up a healthy front and has a weak heart. Such a building, with all its frills, is'nt worth much to the occupants, hence it *can't* be worth much to the owner.

THE DON LEE BLDG.,
San Francisco, is equipped with
KEWANEE BOILER
AND KEWANEE GARBAGE BURNER
both burning oil with high efficiency

LOW PRESSURE HEATING BOILERS HIGH PRESSURE POWER BOILERS

KEWANEE BOILER COMPANY

San Francisco: 216 Pine Street Los Angeles: 420 East 3rd Street

SERVICE

TESTING
INSPECTION
CONSULTATION
PRODUCTION

Structural and Engineering Materials

ROBERT W. HUNT CO.
ENGINEERS
Chemical and Physical Testing Laboratories

New York Chicago Pittsburgh
St. Louis San Francisco Mexico City
London Montreal

"CALIFORNIA STUCCO"

It is a finishing plaster coat made in many beautiful colors, from a true Portland Cement base, which assures everlasting qualities.

"The Stucco which is making California Architecture famous"

For Sale by All Dealers

ATLAS MORTAR COMPANY
SAN FRANCISCO

California Stucco Products Co.
LOS ANGELES

"HOFFITE"

The Foremost Plastic Asbestos

STUCCO

Often Imitated — Seldom Equaled

A "Hoffite" exterior is a seamless wall of stone, impervious to the weather. Fire and water proof.

Not a new or untried product. We have used a combination of magnesite and asbestos in our stucco for six years.

The First Cost Is the Last Cost
Let Us Give You Facts and Figures

Literature on Hoffite, instructions for applying and table showing covering capacity will be sent on request

The Hoff Magnesite Co.
MANUFACTURERS

MILLER & ALF
Gen. Sales Agents

1040 S. Broadway Los Angeles
337 Monadnock Bldg. San Francisco

CORROSIRON

MADE IN U.S.A.

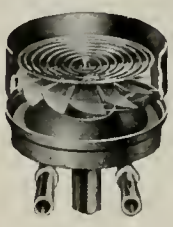
the acid-proof drain pipe

Make your acid drain lines permanent -:- -:-

Corrosiron drain pipe and fittings manufactured and carried in stock in San Francisco

PACIFIC FOUNDRY COMPANY
Harrison and Eighteenth Streets
SAN FRANCISCO

ROTARY OIL BURNERS



Produce the highest efficiency in all standard furnaces, either steam, hot water or hot air, because of the short high temperature flame.

Specify "ROTARY"

The Burner with the Revolving Grate

ROTARY OIL BURNER CO., INC.
159-12th STREET, OAKLAND

Sutter 4998

TOKHEIM

OIL TANK & PUMP CO.

Factory Branch
806 Sharon Building,
55 New Montgomery Street
San Francisco

PERMA-LIGHT

FLAT MILL WHITE

A Snow White Paint in Oil, giving equal opacity of cold water paints. Can be applied with spraying machines at a small increase of cost over water paints for use in factories, warehouses, loft buildings, laundries.

Hill, Hubbell & Co.

TECHNICAL PAINTS

SAN FRANCISCO

Los Angeles Portland Seattle New York

Specify

TRADE MINWAX MARK

Plaster Bond and Dampproofing No. 300

Applied to the inside of exterior walls. It cures tacky and remains tacky and plastic indefinitely. It forms a tenacious, perfect and lasting bond between wall and plaster.

Waterproof your buildings while they are dry

Send for Booklet on Products, Data and Specifications

MINWAX CO., INC.

K. M. HAYDEN
22 Battery St.
San Francisco

W. C. LEA
653 So. Clarence St.
Los Angeles

"By Their Work Shall Ye Know Men"

An architect has no better salesman than the work he has done

CANNON FACE BRICK

in your buildings sell your services to others

Knights Landing Grammar School — Face Brick Veneer on Frame

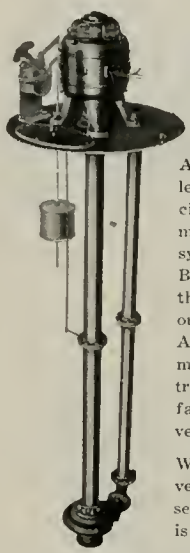
W. H. Weeks, *Architect*

Manufacturers of Face Brick, Floor Tile and Denison Interlocking Tile

CANNON & CO.

Office and Plant: 12th St. and S. P. Ry. Sacramento
Exhibit at 77 O'Farrell St., San Francisco

When writing to Advertisers please mention this magazine.



Factory Service at Your Door

Always an aggressive leader in progressive policies, this company many months ago established a system of service for Byron Jackson owners that today is still without parallel in this field. A fleet of motor trucks manned by factory-trained mechanics bring factory service to your very door.

When buying a pump investigate the question of service its manufacturer is in a position to render.

Byron Jackson Pump Mfg. Co., Inc.

Wherever water is to be lifted

Sharon Building, San Francisco
Salt Lake City, Los Angeles, Visalia, Portland, Ore.

Specify **ROBERTSON VENTILATORS**

The improved stationary Robertson ventilator provides greater exhaust capacity under all conditions than has been secured by any other ventilator on the market. The patented air deflection band attached to the ventilator stack below the storm band prevents air currents, such as those deflected by sloping roofs, from entering the Robertson Ventilator.

Made of Robertson Process Asbestos Protected Metal

Send for descriptive pamphlet and price list

H. H. ROBERTSON CO.

H. M. HOLWAY, District Manager
1007 Hobart Building, San Francisco
Metropolitan Building, Los Angeles

Peerless Ironing Board-Table
No. 3-14

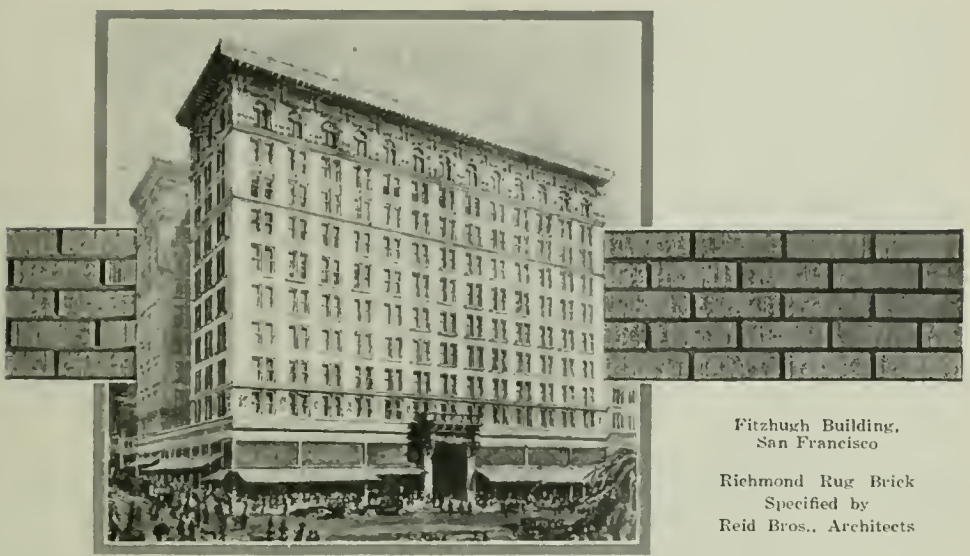
1 of 29

PEERLESS BUILT-IN FURNITURE

conveniences. All standardized. Installed singly or in assemblies. Send for catalog of these new devices. All unusual.

SOLD BY
The **HOOSIER STORE**
Pacific Building, San Francisco

Los Angeles, Oakland, Portland, Seattle, Fresno, Stockton, San Jose, Long Beach, San Diego, Glendale.



Fitzhugh Building,
San Francisco

Richmond Rug Brick
Specified by
Reid Bros., Architects

Solid Wall Fabric —
Beautiful, Strong and Enduring

RICHMOND RUG BRICK lend themselves in the highest degree to the artistic requirements of harmonious color and form. The many colors and shades in which this new face brick are made make possible a wide range of choice and allow for an infinite variety of pleasing wall surfaces. Picture the beauty of texture and the veritable symphony of color that is found in old tapestries and Oriental rugs, and you have the nearest approach we can offer to a description of RICHMOND RUG BRICK walls. Because it is in the wall that the full attractiveness of Rug Brick is best appreciated, we have laid up a series of panels in various mortar colors in our sales rooms, and cordially invite you and your friends to make full use of this exhibit.

Face Brick
Enamel Brick
Paving Brick
Fire Brick
Common Brick
Hollow Building Tile
Roofing Tile
Mantel and Floor Tile
Atlas White Cement

Let Face Brick stamp in your work an enduring personality which neither time nor weather will efface

Richmond Pressed Brick Company — Richmond, California
Los Angeles Pressed Brick Company — Los Angeles, California

United Materials Company
Northern California Distributors
Sharon Building — **San Francisco**

When writing to Advertisers please mention this magazine.

All-in-One
Bath Tubs

All-in-One
Lavatories

The All-in-One Ideal

It is our one objective to produce the most efficient and the most beautiful plumbing fixtures. True, this is a high mark for which we are aiming, but we present to you the All-in-One line as the product of thorough study, the best of materials, the best of workmanship, and ask you to judge it from the standards of plumbing fixture excellence.

ASK YOUR JOBBER OR WRITE

ALL - IN - ONE

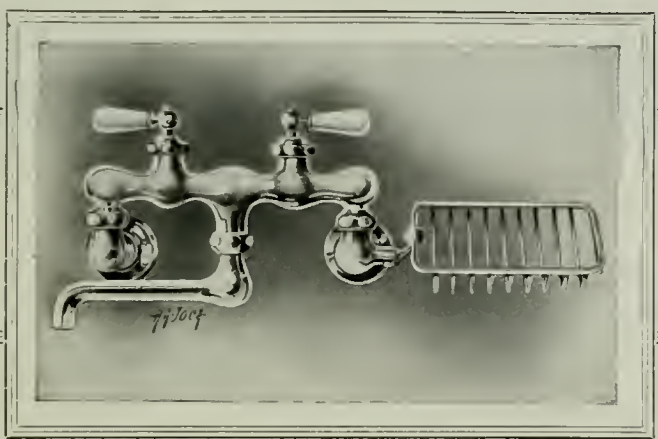
Plumbing Fixture Corporation

Plant, North Sacramento

Office, Rms. 230-231 Oschner Bldg., Sacramento, Calif.

San Francisco Office, 314 Hobart Building

A faucet that will deliver hot, mixed or cold water :: ::



Installed in the kitchen sink, this popular Quaker fixture supplants the customary two separate faucets, and provides a convenient place for soap.

It lightens work
and saves time

HAINES, JONES & CADBURY COMPANY · HAJOCA · PHILADELPHIA · TRADE MARK

HAINES, JONES & CADBURY CO.
MAKERS OF PLUMBING SUPPLIES
857-859 FOLSOM STREET, SAN FRANCISCO
PHILADELPHIA-NEW YORK-RICHMOND, VA.-SAVANNAH
JACKSONVILLE-CHARLOTTE

When writing to Advertisers please mention this magazine.

We Ship

Crude Sand from Pits in Bulk, in Gondola Cars.

Washed and Dried Sand, in Bulk—Paper Lined Box Cars or Sacked—100 lb. Sacks as Shown Above.

Del Monte Properties Company

401 CROCKER BUILDING

Phone Sutter 6130 SAN FRANCISCO

The Petrium Sanitary Sink

Makes Kitchen Work Quieter

Because of the elasticity of the composition of its surface The Petrium Sanitary Sink reduces breakage and the jarring, rattle and clatter of dishes on the drainboards to a minimum.

Architects, your principals will welcome your specification of the Petrium.

This is one of the many advantages that commend the Petrium to discriminating housewives.

PETRIUM SANITARY SINK CO.

FIFTH AND PAGE STREETS, BERKELEY, CALIFORNIA

The Petrium Sanitary Sink is displayed at the factory; Building Materials' Exhibits, Oakland and San Francisco; by our San Francisco distributors, M. E. Hammond, Hoosier Cabinet Store and by local representatives in the outside territory.

Perfect Concealment with

The "California" Secret Installation

This new economical and space-saving method of installation of wall beds has met with instant approval by all architects and owners who have seen it. It solves the problem of having too many doors and windows and at the same time conforms to the most modern idea in wall decoration.

The above illustration shows a "California" square tube wall bed in walnut finish hung on a secret installation door.

Write for Complete Data and Specifications

CALIFORNIA WALL BED COMPANY

714 Market Street, San Francisco

165 Thirteenth Street, Oakland — 1040 S. Broadway, Los Angeles

STANLEY
Ball-Bearing
BUTTS

Leather Mat Manufacturing Co., Inc.
Manufacturers of
"BEATSALL"
California Product

Leathermat

General Offices, Salesroom and Factory
340 SANSOME STREET
Phone Kearny 1817
San Francisco, California

HEATING
VENTILATION

PLUMBING
SHEET METAL WORK

FLOOR AND WALL TILING
SCOTT CO., INC.

243 MINNA STREET — SAN FRANCISCO

JOHN A. PETERSON, President — B. HEINRICH, Vice-President

SAN FRANCISCO ELEVATOR CO., Inc.
ELEVATORS

Automatic, Electric, Hydraulic, Belt Power, Automatic Dumbwaiters and Handpower Machines, Push Button Passenger Elevators a Specialty

Telephone Kearny 2443 — 860 FOLSOM STREET, SAN FRANCISCO

When writing to Advertisers please mention this magazine.

MARBLE

Finished and Installed

EXTERIOR

INTERIOR

"GOOD FOR ALL TIME" VERMONT MARBLE

VERMONT MARBLE COMPANY

244 Brannan St., San Francisco
Phone Kearny 3470

East End 11th St. Bridge, Tacoma

Cast Iron Stairs and Store Fronts

Bank and Office Railings, Elevator Enclosures and Fire Escapes

C. J. HILLARD & CO., Inc.

Nineteenth and Minnesota Streets

Telephone Mission 1763

SAN FRANCISCO, CALIF.

DEPENDABILITY

"Since 1858"

LINOLEUMS

WINDOW SHADES

Carpets
Draperies
Rugs

Estimates furnished

D. N. & E.

Walter & Co.

562-572 Mission Street
SAN FRANCISCO

Los Angeles Portland Seattle

Sacramento County Court House, Saeramento, Cal.

Specify

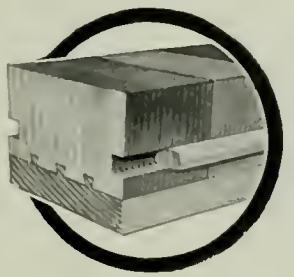
COLUMBIA MARBLE

Samples and complete information relative to the use of Columbia Marble sent upon request.

COLUMBIA MARBLE CO.

413 Rialto Building, San Francisco
Telephone Sutter 1244

Composing Room, Fresno (Calif.) Bee



Bloxonend — *A Permanent and Smooth Floor*

A thorough investigation of Bloxonend's performance in a number of large industrial plants convinced the owners, architect and engineer of the Fresno Bee Bldg. that it costs less per sq. ft. per year than any other flooring manufactured. The comfortable surface afforded eliminates fatigue while its smoothness speeds up transportation and increases operating efficiency in general.

Bloxonend, made of Southern Pine with the end grain up, presents the toughest wearing surface possible. It comes in 7½-foot lengths with the small blocks dovetailed onto baseboards. On the job, these strips are connected with splines and nails, the result being a compact, durable floor that remains smooth under the most grilling service.

Write nearest office for Architectural Specifications Today

Carter Bloxonend Flooring Co.

H. M. Holway, District Manager

San Francisco: 1007 Hobart Bldg.
Portland, Ore.: Chamber of Commerce Bldg.
Kansas City, Mo.: Long Bldg.
Chicago: 332 So. Michigan Avenue.
Los Angeles: 600 Metropolitan Bldg.
New York: 501 Fifth Avenue.
Cleveland: 1900 Euclid Avenue.
Boston: 312 Broad Exchange.

GLASS

Fuller & Goepp

32 Page Street, San Francisco

Telephone Market 498

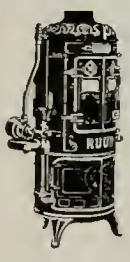
MANUFACTURERS OF

ART AND LEADED GLASS MIRRORS

Dealers in *WHITE* Glass for Table Tops, Counter Tops, Sink Backs, Etc. Complete Stock—Prompt Deliveries

Oakland Office, Jackson at 11th *Tel. Lakeside 7272*

RUUD HOT WATER
The World's Standard



INSTANTANEOUS
DEPENDABLE
DURABLE
ECONOMICAL

All Automatic Ruud Heaters are double shelled, double fuel controlled and made safe by the Ruud Automatic Thermostat.
Specify, and insist upon the RUUD in all your buildings.

RUUD HEATER CO.
431 Sutter St. San Francisco
Phone Sutter 1640

Alvaline, Cementoline
and other
Jones-Duncan Products

MAGNER BROTHERS
PAINT MAKERS

Telephone: Market 113
414-424 Ninth St. San Francisco

HEATING-PLUMBING

COMPLETE PLUMBING AND HEATING SYSTEMS INSTALLED IN ALL CLASSES OF BUILDINGS — ALSO POWER PLANTS

GILLEY-SCHMID CO., Inc.
198 OTIS ST., SAN FRANCISCO
Tel. MARKET 965

THE TORMEY CO.

General
Painters

Phone Franklin
5 - 5 - 9 - 8

1042 Larkin St., San Francisco, Cal.

Phone Sutter 1414

Hunter & Hudson
ENGINEERS

Designers of Heating, Ventilating and Wiring Systems, Mechanical and Electrical Equipment of Buildings

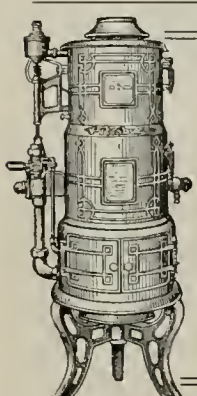
703 Rialto Bldg., San Francisco, Cal.

ELEVATOR ACCESSORIES

We manufacture and install pneumatic elevator door controls and interlocks. (A safety first equipment which has been making good for over ten years.) For information concerning elevator safety and economy we cordially invite you to call

RANDALL CONTROL AND HYDROMETRIC CORPORATION

523 Central Bldg. Los Angeles, Cal. Phone 11901
265A Minna St. San Francisco, Cal. Phone Douglas 2397



Pittsburg

It Insures
Instant
Hot Water
Service

PITTSBURG WATER HEATER COMPANY
478 Sutter S., San Francisco
Phone Sutter 5025

RUSSWIN
BUILDERS' HARDWARE

JOOST BROS., Inc.
SAN FRANCISCO AGENTS
We Carry Complete Stock:
Fishing Tackle—Guns—Mechanics' Tools—Paints—Crockery and Glassware—Stoves—Household Goods. Telephone Market 891.

NO BRANCH STORE
Mazda Lamps Electric Goods

PACIFIC MANUFACTURING COMPANY
MILL WORK, SASH AND DOORS
HARDWOOD INTERIOR TRIM A SPECIALTY
MAIN OFFICE: SANTA CLARA, CALIFORNIA
SAN FRANCISCO, 177 Stevenson Street — LOS ANGELES, 908 Washington Building
OAKLAND, 1001 Franklin Street — SAN JOSE, 16 North First Street

LARSEN-SIEGRIST CO., Inc.
BUILDING CONSTRUCTION
807 Claus Spreckels Building — SAN FRANCISCO

METAL .....
Store Fronts
Phone Doug. 3123-4
Oak. 5050-1

GLASS OF ALL KINDS
Mirrors Art Bevel Plate
COBBLEDICK-KIBBE GLASS CO.
666-668 HOWARD ST. SAN FRANCISCO, CAL.
WASHINGTON AT THIRD ST. OAKLAND, CAL.

VAN EMON ELEVATOR COMPANY
PASSENGER ELEVATORS FREIGHT
1159-65 Howard Street — Market 808 — San Francisco, Calif.

Electric Wiring
Fixtures and Lighting Systems Installed
Motors Installed

A. F. WELLS CO.
Electrical and Mechanical Engineers — Contractors
155 Second St.
San Francisco, Cal.
Douglas 1820

Telephone, Buzzer, and Intercommunicating Systems
Electric Appliances
Estimates Furnished

Res. Tel. Merritt 3600
HERBERT BECKWITH
Building Construction
Formerly with ARTHUR ARLETT
Everson Building OAKLAND

JOHN M. BARTLETT
GENERAL CONTRACTOR
Office 357 - 12th ST. OAKLAND
Phone Lakeside 6750
Res. Phone Berkeley 6884W

For Information on Public Seating *Consult*
WESTERN STATES SEATING COMPANY
133 Kearny Street, San Francisco
2133 Kern Street, Fresno, Calif.
1040 So. Broadway, Los Angeles, Calif.

When writing to Advertisers please mention this magazine.

SCHOOL AND THEATRE EQUIPMENT
FLAGG STUDIOS SAN FRANCISCO LOS ANGELES
DESIGNERS AND MANUFACTURERS
Drop Curtains, Automatic Hoists
Stage Hardware, Scenery
"Hitch Your Desires to Our Experience"

Phone Franklin 548
I. R. KISSEL
Decorator, Painter and Paperhanger
1747 SACRAMENTO ST., Bet. Polk St. and Van Ness Ave., SAN FRANCISCO

ROBERT TROST
PHONE MISSION 2209
General Building Contractor
We Specialize in High Grade Work and Employ Skilled Labor in every Branch of the Building Industry.
26th and Howard Streets
SAN FRANCISCO

Phone Sutter 1533
ALFRED H. VOGT
GENERAL CONTRACTOR CONCRETE CONSTRUCTION
185 Stevenson Street, San Francisco

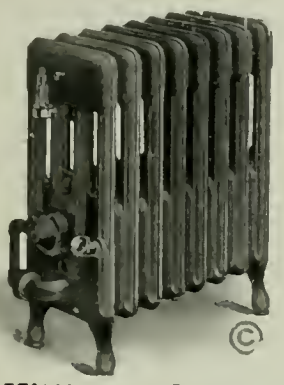
LAWTON & VEZEY
CONTRACTORS AND BUILDERS
EVERSON BUILDING OAKLAND, CALIFORNIA

MONSON BROS.
Building Construction
Yard
Mariposa and Bryant Streets
Phone Market 2963
251 Kearny Street, San Francisco
Telephone Douglas 6619

CHAS. STOCKHOLM & SONS
GENERAL CONTRACTORS
849 MONADNOCK BUILDING Phone DOUGLAS 4657 SAN FRANCISCO

HANNAH BROS.
CONTRACTORS AND BUILDERS
142 Sansome Street, San Francisco
Members Builders Exchange
Phone Douglas 1577

When writing to Advertisers please mention this magazine.



"Williams Service"

Complete Steam Heating Installation

Employing Clow Gasteam Radiators
in Apartments, Schools, Churches, Residences, Commercial Buildings
Perfect Heat — Automatic Control
No Odor — Normal Humidity

Williams Radiator Company
571 MISSION STREET
Telephone Douglas 8230 SAN FRANCISCO

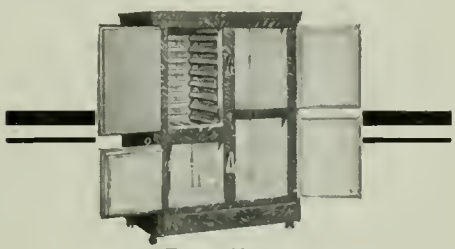
McCRAY
REFRIGERATORS *for* ALL PURPOSES

Wherever there is need for refrigeration service, in the small or large residence, hotel, hospital or institution, there is a McCray to meet that need. More than 30 years' devotion to the problems of refrigeration has made the McCray standard equipment.

Write today for the New McCray catalogs.

No. 95—for Residences
No. 72—for Grocers
No. 64—for Markets
No. 75—for Florists
No. 53—for Hotels and Institutions

McCRAY REFRIGERATOR CO.
2363 LAKE STREET
KENDALLVILLE, IND.
San Francisco Office, 765 Mission Street



For residences

BARLITH
BEFORE PAINTING

Surfaces treated with Barlith take but 62% as much paint and require but 50% to 60% as much labor as untreated surfaces. This statement is not guess work but the result of actual tests.

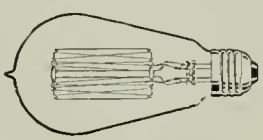
BARLITH is applicable to every kind of building material—stone, brick, stucco, plaster, dry wood, concrete, wall board, fibre board, etc.

— USE —
Barlith Waterproofing

BARLITH COMPANY,
77 O'Farrell Street, San Francisco
Sutter 5333
Factory—West Sacramento, Cal.

ROBERTS MFG. CO.

Lighting Fixtures
Electric Appliances
Incandescent Lamps



WILLYS FARM LIGHTING AND POWER PLANTS

663 Mission Street San Francisco

I. M. SOMMER & CO.
ENGINEERS AND GENERAL CONTRACTORS
CONCRETE CONSTRUCTION
Phone Hemlock 1100
901 BRYANT ST., SAN FRANCISCO

K. E. PARKER COMPANY, Inc.
GENERAL CONTRACTORS
Phone Sutter 5661
Room 515 Clunie Building, SAN FRANCISCO

R. W. LITTLEFIELD
Building Construction
357 12th Street, Room 9, Oakland, Cal.
Phone Lakeside 6750

H. H. HILP, Jr.
J. FRANK BARRETT
BARRETT & HILP
CONCRETE CONSTRUCTION BUILDERS GENERAL CONTRACTORS
918 HARRISON STREET, near 5th, SAN FRANCISCO
Telephone DOUGLAS 700

CAEN STONE
A refined, elegant, interior finish.
A. KNOWLES
CONTRACTOR AND PLASTERER
442 Call-Post Building
San Francisco

STEELFORMS Signify ECONOMY, RAPIDITY, and EFFICIENCY
STEELFORM CONTRACTING COMPANY
STEELFORMS FOR CONCRETE BUILDINGS
C. B. Hopkins, C. E., Manager
681 Market Street, San Francisco
CONCRETE JOIST FLOOR CONSTRUCTION

Phone Piedmont 2079W
DAVID NORDSTROM
GENERAL CONTRACTOR
4146 Emerald Street, Oakland

M. E. VUKICEVICH
SPENCER B. BAGGE
VUKICEVICH & BAGGE
GENERAL CONTRACTORS
Phone Sutter 6700
Office, Builders Exchange, 180 Jessie St., San Francisco

When writing to Advertisers please mention this magazine.

432 Bryant St.
SAN FRANCISCO
Douglas 2676

Standard Fence Co.

60th and Lowell Sts.
OAKLAND
Tel. Piedmont 646

WIRE AND IRON WORKS

DESIGNERS—BUILDERS
HOME AND ESTATE FENCE
AVIARY and TENNIS COURT FENCE
WIRE GRILL WORK—WIRE SCREEN
FLEXIBLE WIRE CONVEYOR BELT
WIRE SPECIALTIES
1922 Santa Fe Avenue, Los Angeles, Cal. Phone 67188

Steel Bars

FOR CONCRETE REINFORCEMENT
Cut to Length, Fabricated, Installed

Tel. Douglas 3466 BADT-FALK & CO.
346 Call-Post Bldg., 74 New Montgomery St., San Francisco

THE HERMANN SAFE CO.

Manufacturers of Fire and Burglar Proof Safes, Vaults and Safe Deposit Boxes
Also Representatives for the
YORK SAFE & LOCK CO. OF YORK, PA.
216-224 Fremont Street San Francisco, Cal.

PACIFIC DEPARTMENT
GLOBE INDEMNITY COMPANY
Bonds and Casualty Insurance for Contractors
FRANK M. HALL, formerly Robertson & Hall, Mgr.
444 California Street Phone Sutter 2280 SAN FRANCISCO

CARL H. PETERSON
BUILDER
PHONE DOUGLAS 1876 185 STEVENSON STREET SAN FRANCISCO

PHONE DOUGLAS 2370
R. McLERAN & CO.
GENERAL CONTRACTORS
HEARST BUILDING SAN FRANCISCO, CAL.

D. ZELINSKY & SONS
PAINTERS AND DECORATORS
165 GROVE STREET SAN FRANCISCO

SPENCER ELEVATOR COMPANY SAN FRANCISCO CAL. W WESTINGHOUSE EQUIPMENT

Passenger and Freight Elevators
For Every Service
SPENCER ELEVATOR COMPANY
166-180 Seventh Street San Francisco

When writing to Advertisers please mention this magazine.

TEMPERATURE REGULATION
JOHNSON SERVICE COMPANY
Manufacturers and Installers of JOHNSON Heat Humidity CONTROL
For schools, residences, hospitals, banks, public buildings, also canneries and all kinds of industrial plants—Hot water tank regulators, air and water reducing valves.
Rialto Bldg., SAN FRANCISCO; 605 Van Nuys Bldg., LOS ANGELES

Atlas Heating and Ventilating Co., Inc.
ENGINEERS and CONTRACTORS
STEAM AND HOT WATER HEATING, FANS, BLOWERS
FURNACES, POWER PLANTS—SHEET METAL WORK
Phone Douglas 378 Fourth and Freelon Sts., Bet. Bryant & Brannan, SAN FRANCISCO

CLARENCE DRUCKER HERMAN LAWSON
LAWSON & DRUCKER
PLUMBING—HEATING—CONTRACTORS
450 HAYES STREET
TELEPHONE MARKET 275 SAN FRANCISCO, CAL.

H. G. NEWMAN CO.
PLUMBING HEATING
OAKLAND 3329 2004 TELEGRAPH AVENUE OAKLAND

ALEX COLEMAN
CONTRACTING PLUMBER
706 ELLIS STREET, SAN FRANCISCO Phone FRANKLIN 1006

WM. F. WILSON COMPANY
MODERN SANITARY APPLIANCES
Special Systems of Plumbing for Residences, Hotels, Schools, Colleges, Office Buildings, Etc.
Phone Sutter 357 328-330 Mason Street, San Francisco

W. H. PICARD
Plumbing, Heating, Ventilating and Power Plants
5656 College Avenue
5662 Keith Avenue
Piedmont 7522 Oakland, Calif.

CARL T. DOELL
PLUMBING HEATING
467 21st Street, Oakland, California Telephone Oakland 3524

Specify
LOWELL
Rubber Covered
WIRE

LOWELL INSULATED WIRE CO.
LOWELL, MASS.

LAMP CORDS
AND CABLE

PITTSBURGH
MIRRORED
REFLECTORS

For Show Windows
and
Special Lighting

GUARANTEED for 5 years
The Efficient Lighting Reflector

Inspection Tag on Every Coil

Best By Test

CONNECTICUT

Telephones and Annunciators

For Apartment Houses, Schools, Banks, Public Buildings, Hotels, Etc.

Have given satisfaction for the past 28 years

Let us solve your Interior Telephone Problems

Special attention given the Architects Electrical Problems.
We will gladly assist in preparation of layouts.

MYERS & SCHWARTZ

MANUFACTURERS AGENTS

90 New Montgomery Street
and
Furniture Exchange
San Francisco

1119 So. Los Angeles St.
Los Angeles
1626 Eighth Avenue
Seattle, Wash.

An ornament to any municipal park, school, or childrens' playground.

The Haws Vitreous China Pedestal (Model 12) Sanitary Drinking Fountain

Haws Sanitary Drinking Faucet Co.
1808 Harmon Street, Berkeley

RETARDO

— preserves the surface
— protects against fire
— beautifies

RETARDO is manufactured in all colors and for all purposes. It is endorsed and recommended by Fire Departments and Fire Prevention Bureaus. RETARDO costs no more than ordinary paint, but does more work.

Send for color chart and further information

Fire Retardent Products Co.
2838 Hannah Street Oakland, Calif.

FIRE PREVENTATIVE PAINT

ACORN HARDWOOD FLOORS

Architects and Builders specify and recommend

"Acorn Brand" Oak Flooring

knowing that the manufacturer and distributor will guarantee client satisfaction

Strable Hardwood Co.
HARDWOOD LUMBER
511-545 First St., Oakland, Calif.
Phone Oakland 245

Formal Garden Effects may be obtained on your Country Estate within a period of two to three years.

MacRORIE-McLAREN CO.
LANDSCAPE ENGINEERS
and General Nurserymen
514-16 Phelan Bldg., San Francisco
Nurseries at Beresford

An Indespensible Addition to the Architect's Library

WARE'S GEORGIAN PERIOD

BEING PHOTOGRAPHIC AND MEASURED DRAWINGS OF COLONIAL WORK WITH TEXT

By WILLAM ROTCH WARE

IN SIX VOLUMES

Portfolio Edition - - - $60.00
Library Buchram - - $75.00
Partial Payment Plan on Request

M. P. C. BOOK COMPANY, INC.
239 WEST 39TH STREET
NEW YORK

S. & S. TILE CO.

MANUFACTURERS OF
HAND-MADE TILES FOR WALLS AND FLOORS. REPRODUCTIONS OF OLD SPANISH AND MOORISH GLAZED TILES
Factory, 4th and Carrie Sts. San Jose, Cal.

JAS. I. KRUEGER

Representing
Illinois Engineering Company, Chicago
Eureka Brass Works, Cincinnati
Manufacturers of
Vacuum and Vapor Steam Heating Materials, Power Plant Equipment
Standard Radiator and Gate Valves, Pumps for Vacuum Systems of Heating
557-559 Pacific Building, San Francisco Telephone Sutter 7057

CHARLES T. PHILLIPS COMPANY

CONSULTING ENGINEERS
HEATING, VENTILATING, ELECTRIC WIRING, PLUMBING
Roberts Building, Los Angeles Bank of Italy Bldg., San Francisco

CYCLOPS IRON WORKS

ICE MAKING and REFRIGERATING MACHINERY, TRAVELING CRANES
Office and Works: 837-847 FOLSOM ST. SAN FRANCISCO, CAL. Telephone: SUTTER 3030

GRINNELL AUTOMATIC SPRINKLER

GRINNELL COMPANY
OF THE PACIFIC
VALVES
PIPE and FITTINGS
ENGINEERS AND CONTRACTORS
453 Mission Street, San Francisco
CHEMICAL FIRE EXTINGUISHERS and FIRE ENGINES

Fire Protection Engineering Company

ENGINEERS AND CONTRACTORS
Executive Offices and Factory
67 MAIN STREET
San Francisco, California
Automatic Sprinkler Systems
Automatic Fire Alarm Systems
Watchman Detector Systems
Chemical Engines
Hand Fire Extinguishers
Motor Driven Fire Apparatus

CLINTON CONSTRUCTION COMPANY

of California
BUILDERS AND MANAGERS OF CONSTRUCTION
923 Folsom Street San Francisco

RADIATOR AIR VALVES

Traps, Rapid Riser Vents, Vacuum and Condensation Pumps
They Are Absolutely Guaranteed
JAS. P. MARSH & CO., Represented by HULTING, HURST & HULTING
Monadnock Building (Telephone Sutter 5295), San Francisco, Cal.

ACORN
HARDWOOD FLOORS

Architects and Builders specify and recommend

"Acorn Brand" Oak Flooring

knowing that the manufacturer and distributor will guarantee client satisfaction.

Strable Hardwood Co. *HARDWOOD LUMBER*

511-545 FIRST ST. PHONE OAKLAND 245 OAKLAND, CALIF.

Power and Heating
BOILERS

Steel Tanks, Stacks, Breechings,
Sheet and Plate Work
Machinery and Iron Castings

MAIN IRON WORKS

Main Office and Works: 7th, DAGGETT AND 16th STS. San Francisco, Calif.
Telephone Market 752-753

Walls finished with Cabot's Old Virginia White
Roof finished with No. 346 Dark Gray Creosote Stain
WALTER BOSCHEN, Architect, St. Joseph, Mo.

The Latest
Country House
Color-schemes

An especially appropriate and harmonious exterior color-treatment has been developed for the dignified and beautiful type of country-house.

Cabot's Old Virginia White, for the walls

Cabot's Creosote Stains in greens or dark gray, for the roofs

The soft, brilliant "whitewash white" of the Old Virginia White is particularly suitable for this type of house, and the rich greens and velvety dark gray stains harmonize perfectly for the roof, with the old New England dark green blinds.

SAMUEL CABOT, Inc., Mfg. Chemists, Boston, Mass.

Cabot's Creosote Stains, Waterproof Cement, and Brick Stain
"Quilt" Conservo Wood Preservative, Damp-Proofing
Protective Paints, Waterproofing, etc.

Pacific Materials Co., San Francisco
Waterhouse-Wilcox Pacific Co., Los Angeles
Theo. F. Snyder, San Diego, Cal.
S. W. R. Dally, Seattle
Cress & Co., Portland
H. G. Lanahan & Co., Spokane, Wash.

CALIFORNIA ARTISTIC METAL & WIRE CO.
J. T. McCORMICK, PRESIDENT
ORNAMENTAL IRON AND BRONZE
349-365 SEVENTH ST. SAN FRANCISCO

MORTENSON CONSTRUCTION CO.
CONTRACTORS FOR STRUCTURAL STEEL AND IRON
H. MORTENSON, President
Office and Shops: Corner 19th and Indiana Streets
Phone: Mission 5033 SAN FRANCISCO, CAL.

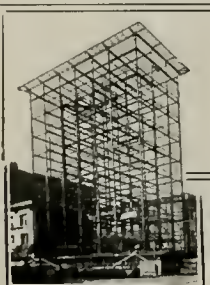
JUDSON MANUFACTURING COMPANY
Main Office:
817-821 FOLSOM STREET
Telephone Sutter 6820
SAN FRANCISCO
Structural Steel and Iron Work
Works:
OAKLAND—EMERYVILLE
CALIFORNIA
C. C. SAUTER, Chief Engineer

Federal Ornamental Iron & Bronze Co.
Bank Counter Screens and Grille Work Our Specialty
Most Modern Equipment Throughout
Recent Contracts: BANK OF ITALY, FIRST NATIONAL BANK
16th Street and San Bruno Avenue, San Francisco Phone Market 1011

HERRICK IRON WORKS
STRUCTURAL STEEL
Office and Works, 18th and Campbell Streets
Oakland, Cal. Phone Lakeside 1460

Telephone Mission 58 A. A. DEVOTO, President
CENTRAL IRON WORKS, Inc.
STRUCTURAL STEEL
Office 2050 BRYANT STREET SAN FRANCISCO, CAL.

C. F. HOFFMAN L. W. FLIEGNER
Golden Gate Iron Works
STRUCTURAL STEEL AND ORNAMENTAL IRON CONTRACTORS
Howard and 11th Streets San Francisco



SCHRADER IRON WORKS, Inc.
STRUCTURAL STEEL CONTRACTORS
Fire Escapes, Waterproof Trap Doors, Ornamental Iron Work
1247-1249 HARRISON STREET SAN FRANCISCO, CAL.
Bet. 8th and 9th Telephone Market 337

When writing to Advertisers please mention this magazine.

for beauty-

Tropico Tiles

TROPICO QUARRY TILES in red and buff shades are a distinctive and durable floor material.

TROPICO FAIENCE TILES in a variety of dull glazes and textures are the ideal materials for mantels, sun-rooms, bathrooms, and all interior and exterior decorative treatment where tiles of permanent, soft coloring are desired.

Sold by all tile dealers.

Look for the name TROPICO on your tiles.

TROPICO POTTERIES Inc.
GLENDALE – CALIFORNIA

Make Your* CRANE *Visit Part of the Plan

THE complete resources of CRANE Branches and Exhibit Rooms the country over are at your disposal when you need equipment for any phase of plumbing, sanitation, heating or kindred service.

We are manufacturers of about 20,000 articles including valves, pipe fittings and steam specialties made of brass, iron, ferrosteel, cast steel and forged steel, in all sizes, for all pressures and all purposes, and are distributors through the trade, of pipe, heating and plumbing materials.

CRANE CO.
Plumbing Supplies

Second and Brannan Sts. San Francisco
348 Ninth Street Oakland

Genuine Hyloplate Blackboards
Best Pennsylvania Slate Blackboards
School Furniture
Western Venetian Blinds
Lockers

C. F. WEBER & CO.

San Francisco
Los Angeles
Reno
Phoenix

The GOLD MEDAL MAIL CHUTE

INSTALLED IN THE NEW SAN FRANCISCO CITY HALL AND THE WHITE MARBLE MERRITT BUILDING LOS ANGELES

Given highest award at Panama-Pacific International Exposition 1915

Waterhouse-Wilcox Co.
California Representatives
523 MARKET Street
SAN FRANCISCO
331 E. 4TH STREET
LOS ANGELES

F. T. CROWE & CO.
Seattle, Wash.

The J. McCracken Co.
Portland, Ore.

American Mailing Device Corporation

BUTTE ELECTRIC AND MFG. CO.

PAUL BUTTE, Owner

HIGH GRADE ELECTRICAL INSTALLATIONS

FEDERAL ELECTRIC BANK PROTECTION SYSTEMS

DOUGLAS 145 534 Folsom Street San Francisco

H. S. TITTLE

CONTRACTING ELECTRICAL ENGINEER

766 FOLSOM ST., SAN FRANCISCO Phone SUTTER 4278

To Be "Low Bidder" Not Always Our Aim

"QUALITY AND SERVICE ALWAYS"

Our nation-wide organization and large experience in this field assure you always of fair estimates and absolute satisfaction. Electrical Appliances

F. E. NEWBERY ELECTRIC CO.

Alta Building, 381 Bush Street, San Francisco Phone Sutter 6361

San Francisco, Cal. Oakland, Cal. Los Angeles, Cal.

NE PAGE, McKENNY CO.

Electrical Engineers and Contractors

Phone Sutter 2369 589 Howard St., San Francisco, Cal.

BERKELEY ELECTRICAL COMPANY

ELECTRICAL CONTRACTORS—FIXTURES

2142 Center St. PHONE BERKELEY 8747 Berkeley, Calif.

AUTOMATIC ELECTRIC CO.

PAX—Private Automatic Telephone Exchanges. We have just installed a complete system in new Standard Oil Building. Ask for our engineer to call.

DIRECT LINE TELEPHONE CO., *Agents*

37 CALIFORNIA ST. Telephone Douglas 722 SAN FRANCISCO

PACIFIC ELECTRIC CLOCK CO.

J. J. Estabrook

Manufacturers and distributors of Electric Clock Systems and Time Keeping Devices for Schools, Public and Private Buildings. Plans and Specifications prepared by competent engineers without charge.

86 THIRD STREET
SAN FRANCISCO, CALIF.

Browne-Langlais Electrical Construction Co.

Agents for

ROBBINS and MYERS MOTORS, PACKARD MAZDA LAMPS

313 FIFTH STREET, SAN FRANCISCO

Telephone Douglas 976

1828—MOTT—1922

Architects and their clients are invited to visit our show rooms, 553-555 Mission St. San Francisco, D. H. Gulick, manager.

Los Angeles Office—721 Central Bldg.

MOTT COMPANY
of California

Telephone Douglas 2046 Charles Felix Butte

Butte Elec. Equipment Co.

Trade Mark BEECO Registered

ELECTRICAL
CONTRACTORS AND ENGINEERS

530 FOLSOM STREET SAN FRANCISCO

L. SIEBERT DESIGNERS AND MANUFACTURERS OF J. GENSLER

SWITCH BOARDS · PANEL BOARDS
PROTECTIVE POWER PANELS

Drendell Electrical and Mfg. Co.

DEMCO

1345-47
HOWARD STREET

SAN FRANCISCO,
CALIF.

PHONES
MARKET 1753
1754

ELEVATORS

FREIGHT & PASSENGER

FOR EVERY MODERN
BUILDING SERVICE

UNION CONSTRUCTION COMPANY

Main Office:
BALFOUR BLDG.
San Francisco

Works:
FOOT OF 14TH ST.
Key Route Basin, Oakland

MILLER FOLDING IRONING BOARD

ELIMINATES WALL CABINET—IS INSTALLED IN KITCHEN CUPBOARD

NO { PLASTER GROUNDS / CASING OR PAINTING

SAVES { WALL SPACE AND LABOR / TIME AND MATERIAL

Exhibited and sold by { LANNOM BROS. MFG. CO / 362 Magnolia St., Oakland, Calif.

Send for Catalogue to { W. N. MILLER / 844 Thirteenth St., Oakland

Specify —"PERFECTION" WALL BEDS

YOUR CLIENT WILL CERTAINLY APPROVE

Write for our Specifications, Prices, Etc.

LEVERETT T. SPAULDING, 1041 MISSION STREET

Telephone Market 8405 San Francisco

A. C. SCHINDLER, President CHAS. F. STAUFFACHER, Secretary

THE FINK & SCHINDLER CO.

Manufacturers of INTERIOR WOODWORK AND FIXTURES
BANK, OFFICE AND STORE FITTINGS
SPECIAL FURNITURE

218-228 THIRTEENTH STREET Bet. Mission and Howard Sts. SAN FRANCISCO, CAL. Telephone Market 474

QUALITY **ARISTO PAINTING CO.** RELIABILITY

SPRAY PAINTING

COMMERCIAL AND INDUSTRIAL PAINTERS

Phone Douglas 4779 39 Tehama Street, San Francisco Roofs Repaired

ERNEST HELD, General Manager

HOME MANUFACTURING CO.

BANK, STORE AND OFFICE FITTINGS
FURNITURE AND HARDWOOD INTERIORS
CABINET WORK OF EVERY DESCRIPTION

543 and 545 BRANNAN ST. Phone Kearny 1514 San Francisco, Cal.

Mullen Manufacturing Co.

BANK, STORE AND OFICE FIXTURES—CABINET WORK OF GUARANTEED QUALITY—CHURCH SEATING

Office and Factory:

Telephone Market 8692 64 Rausch St., Bet. 7th and 8th Sts. San Francisco

JAMES L. McLAUGHLIN

GENERAL CONTRACTOR

Phones Douglas 6645—6646 251 KEARNY STREET, SAN FRANCISCO

Dolan Wrecking & Construction Co.

(D. J. DOLAN)

Lumber, Lath, Nails, Shingles, Doors, Windows
and Plumbing Supplies, New and Second Hand

Phone Market 4264 Office and Yard, 1607-1639 MARKET ST., SAN FRANCISCO

DUROPLATE BLACKBOARD

Is the Best Wood Pulp Composition Blackboard, will not warp or peel or shine. Send for a sample. Test it. Break its cornera. Whittle it. You will be convinced. Deep blue black or dark green.

Wentworth

39 SECOND ST., SAN FRANCISCO
School, Bank, Library and Office Furniture
San Francisco Oakland
Los Angeles Portland Seattle

Carey

BUILT-UP ROOFING

Pipe and Boiler Coverings
Asbestos Roofing
Elastite Expansion Joints
Carey Fibre Roof Coating
Asfaltslate Shingles
JONES BROTHERS ASBESTOS SUPPLY COMPANY, INC.
512 Second Street, San Francisco
Telephone, Garfield 156

WIRING

CONTRACTORS
CENTRAL ELECTRIC CO.
AND DEALERS

177-179 Minna Street, San Francisco
Phone Douglas 4832

A BETTER IRON
TONCAN METAL

Phone Douglas 3775

United Alloy Steel Corporation
CANTON, OHIO

Black Galvanized and Blue Annealed Sheet

WESTERN SALES OFFICES
Santa Fe Building, San Francisco
LOS ANGELES 528 Title Insurance Bldg.
PORTLAND 301 Henry Building

REMILLARD BRICK CO.
Est. 1869
Manufacturers
COMMON BRICK
332 Phelan Building
San Francisco, Calif.
Plants: San Jose, Pleasanton

The Fidelity and Casualty Company of New York

CASUALTY INSURANCE and SURETY BONDS

California Office
Balfour Building San Francisco
Assets, $27,000,000; Surplus, $7,000,000

JOHNS-MANVILLE, Inc.
of California
SERVICE TO ARCHITECTS
Architectural Acoustics and Sound-Proofing, "Colorblende" Asbestos Shingles, Asbestos Prepared Roofings, Asbestos Built-up Roofings, Mastic Industrial Flooring, Keystone Hair Insulating and Sound-Deadening.

JOHNS-MANVILLE SERVICE
COVERS THE CONTINENT

JOHNS-MANVILLE, Inc.
of California
DISPLAY ROOM
500 POST STREET
San Francisco

"BLAZING" THE TRAIL

We've been doing it for many years—giving the Sportsman Better Value for Quality than he ever before received. "Value at a Fair Price" in everything for the Sportsman.

The Ellery Arms Company
583-85 MARKET ST
SAN FRANCISCO, CAL.

SEND FOR CATALOG *The Sign of Quality*

OPEN HEARTH
REINFORCING STEEL BARS

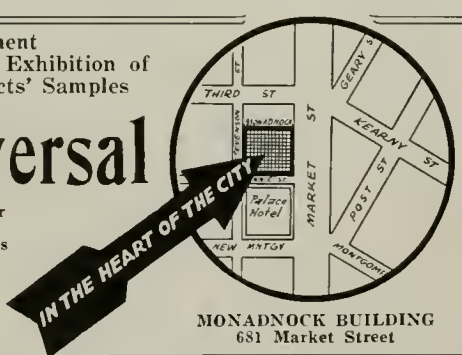
Square Deformed—Immediate Shipment—Cut to required lengths
PACIFIC COAST STEEL COMPANY
Sales Office, Rialto Building SAN FRANCISCO Phone Sutter 1564

SAFETY RELIABILITY ECONOMY
The three dominant factors in specifying elevators

Pacific Elevators are always safe, and the many installations is proof of their reliability. Alternating current driven elevators are fully as satisfactory as direct current driven machines for high-speed installations, and the cost of power and upkeep is much lower.

Estimates Cheerfully Given
Pacific Elevator & Equipment Company
1129-31 HOWARD STREET SAN FRANCISCO, CALIF.
MANUFACTURERS OF A. C. & D. C. ELEVATORS—PASSENGER OR FREIGHT

A Permanent Exhibition of Architects' Samples
Universal
Visit Our Showrooms
PHONE DOUGLAS 93



MONADNOCK BUILDING
681 Market Street

Building Materials, Engineering Equipment Specialties
Exhibits
Plan to Display Your Products
SAN FRANCISCO, CALIF.

JOHN TRAYNOR CHARLES HARCOURT
OCEAN SHORE IRON WORKS
Manufacturers of
BOILERS, STEEL TANKS, STEEL PLATE SPECIALTIES
Dealers in
BOILERS, TANKS, PUMPS, ENGINES
GENERAL MACHINERY, ETC.
Office and Works: 550-558 EIGHTH STREET
Phones Market 462 and 463
SAN FRANCISCO, CAL.

Look for this Trademark

And if it's there don't worry any more about your Valves and Fittings

Specify and insist upon having

The Kelly & Jones Co. Valves and Fittings

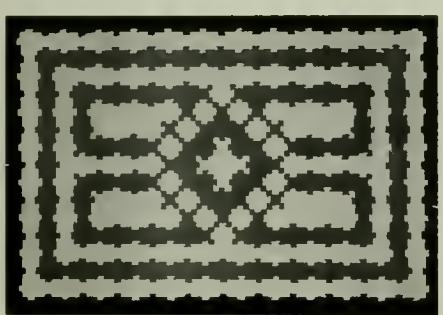
Byers Genuine Wrought Iron Pipe

Republic Steel Pipe

Complete Line of Plumbing Supplies
Large Stocks for Prompt Delivery
Catalogue on request

California Steam & Plumbing Supply Co.

671-679 Fifth Street, Corner Bluxome
SAN FRANCISCO CALIFORNIA



INTERLOCKING RUBBER TILING

The Elevator Floor

whether in Office Building, Hotel or Department Store, is subjected to a great deal of wear and tear.

—SPECIFY—

INTERLOCKING RUBBER TILING

and you've provided your client's building with a Durable, Economical, Practical material that is sure to give satisfaction. **Twenty tons installed in the Standard Oil Building, San Francisco.** Stock on hand for immediate delivery.

NEW YORK BELTING AND PACKING CO.

NEW YORK

San Francisco Branch 519 MISSION ST. Phone Douglas 1837

Small booklet of designs mailed on request

VIEW AT NILES PLANT

CRUSHED ROCK
GRAVEL For Building and Road Construction
SAND

COAST ROCK AND GRAVEL CO.

500 Call Building SAN FRANCISCO Phone Sutter 3990

Plants at Niles, Fair Oaks, Oroville, Eliot, Piedra, Solo, and Marysville

THE WORLD'S WORD FOR ELEVATOR SAFETY

The Architect who specifies OTIS ELEVATORS may do so with the assurance that the responsibility of the Otis Elevator Company extends beyond satisfactory installation. Buildings equipped with OTIS ELEVATORS enjoy the advantage of prompt service and careful inspection rendered by over a hundred Otis offices.

OTIS ELEVATOR COMPANY

2300 STOCKTON ST. SAN FRANCISCO

OFFICES IN ALL PRINCIPAL CITIES

When writing to Advertisers please mention this magazine.

BUILDING FOR WALTON N. MOORE DRY GOODS COMPANY, SAN FRANCIS CO
Geo. W. Kelham, *Architect* Foundation Company, *Builders*

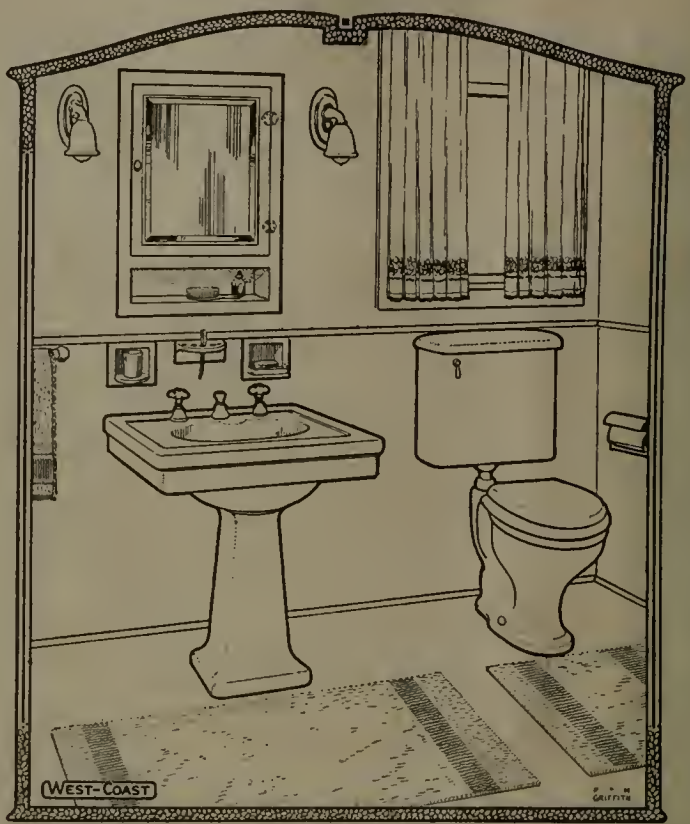
FURRING CHANNELS
CORNER BEAD
and ARMCO IRON

Herringbone
RIGID METAL LATH

Let us tell you the many advantages of
HERRINGBONE

The General Fireproofing Co.

20 Beale Street, San Francisco



"West Coast" Two-Fired Vitreous China Pedestal Lavatory, Closet and Tank

You cannot mar the surface—

of "West Coast" Plumbing Fixtures, for the hard impenetrable glaze will not scratch, crack or discolor.

"West Coast" Plumbing Fixtures, of two-fired vitreous china, retain their snow-white appearance throughout a lifetime of use—and the high-grade fittings installed insure permanent efficiency of operation.

"West Coast" equipment is unreservedly guaranteed against defects in materials and workmanship.

WEST COAST Porcelain Manufacturers

Wells Fargo Building, San Francisco

Plant, Millbrae, California

PUBLIC LIBRARY

The ARCHITECT & ENGINEER

AUGUST 1923

Published in San Francisco
50 cents a copy - $2.50 a year

Get the Best

TRADE MARK REGISTERED

Specify **PACIFIC**

PLUMBING FIXTURES

Pacific Sanitary Manufacturing Co.

Main Office: 67 New Montgomery St., San Francisco

Factories: Richmond and San Pablo, California

FLOATINE

The Improved Roof Asphalt

Will not soften run, leak, or slide

Free yourself from roof trouble Specify PABCO 10 and 20 Year Roofs which require the use of FLOATINE

The PARAFFINE COMPANIES, *Inc.*

A $12,000,000 Corporation Operating 16 Plants on the Pacific Coast

TRADE MARK
PABCO PRODUCTS

San Diego Los Angeles San Francisco
Oakland Portland Seattle

Yanna City Hall
Yanna, Arizona
Lyman & Place
Architects and Engineers

It Gives a New Beauty to Stucco

BAY STATE Brick and Cement Coating lends a beauty to stucco that is striking. Dull gray walls stand forth as if transformed. Weathered and drab concrete assumes a new life.

A new life in fact, as well as in appearance. For Bay State Brick and Cement Coating is absolutely moisture-proof. It creeps into the pores of stucco or cement, hardens and waterproofs the wall. It makes walls proof against all weather. Neither dampness nor rain can seep through a coating of Bay State.

Bay State Brick and Cement Coating is made in a large range of tints and in pure, rich white.

Send for samples and booklet to-day.

WADSWORTH, HOWLAND & CO., Inc.

New York BOSTON Philadelphia

Graham Hambly & Son, 1333 E. 7th St., Los Angeles, Cal.
James Hambly & Son, 229 Clay St., San Francisco, Cal.
Jones-Moore Paint House, San Diego, Cal.
McCracken-Ripley Building Materials Co., 45 Fourth Street, Portland, Oregon.
F. T. Crowe & Co., 508 W. Lake Ave., Seattle, Wash.

BAY STATE
Brick and Cement Coating

Joseph Sawyer, Montreal, Architect
Century Electric Co., Montreal, Electrical Contractors

Holtzer-Cabot

HOSPITAL SIGNAL SYSTEMS

Sainte Justine Hospital at Montreal, Canada, is another of the ever-increasing modern hospitals, Holtzer-Cabot equipped.

For fifty years the Holtzer-Cabot Electric Co. have been leaders in the manufacture and development of electrical Signal Systems, and today many of the country's leading architects are specifying Holtzer-Cabot Systems exclusively.

Architects, engineers and members of building boards are invited to write for brochures entitled "Signal Systems for Hospitals" and "Signal Systems for Schools."

Our engineers are at the service of architects and their clients at all times. Just communicate with our nearest office.

The Holtzer-Cabot Electric Co.

Electric Signaling Systems

Home Office and Factory:
125 ARMORY ST., BOSTON, MASS.

BRANCH OFFICES
Chicago, Ill.: 6161-65 So. State St.
New York, N. Y.: 101 Park Ave.
Philadelphia, Pa.: 807 Otis Bldg.
Detroit, Mich.: 1051 Book Bldg.
Cleveland, Ohio: 517 Union Building
Baltimore, Md.: 1104 Union Trust Bldg.
San Francisco, Cal.: Aronson Building.
Minneapolis, Minn.: 627 Metropolitan Life Bldg.

Beauty As Well As Safety

The beauty as well as the safety of this residence street in a California city were assured when the City Engineer specified Westinghouse-Cutter Ornamental Street Lighting Equipment. The many artistic homes in our western cities are enhanced by carefully planned ornamental street lighting.

Well-lighted streets indicate a city of progressive citizens and reflect credit upon the city architect, engineer and other officials. The Illuminating Bureau of the Westinghouse Companies is prepared to co-operate with civic organizations, architects and consulting engineers on park, boulevard, and street lighting problems. Communicate with the nearest district office.

WESTINGHOUSE ELECTRIC & MFG. CO.

George Cutter Works, South Bend, Indiana

District Offices:

Denver Los Angeles San Francisco Seattle

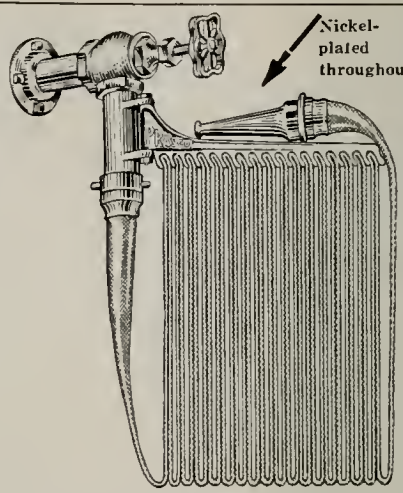
Westinghouse

When writing to Advertisers please mention this magazine.

"Standard"

THIRTY-SIX years' experience manufacturing and installing Electric Time Keeping Systems. Helpful engineering data cheerfully furnished architects, engineers and school boards insuring satisfactory results, and a direct factory branch office completely equipped to render immediate service.

The Standard Electric Time Company
461 Market St., San Francisco, Cal.
Telephone Sutter 241



PRASCO PINLESS
SWINGING HOSE RACK
For 50, 75, 100 ft. Underwriters Unlined Linen Hose
No pins to break, bend, or jam
Hose pays off one loop after the other
Plant Rubber & Asbestos Works
537 Brannan St. San Francisco Tel. Sutter 2100

"CALIFORNIA STUCCO"

It is a finishing plaster coat made in many beautiful colors, from a true Portland Cement base, which assures everlasting qualities.

"The Stucco which is making California Architecture famous"

For Sale by All Dealers

California Stucco Products Co.
58 SUTTER STREET
1503 S. ALAMEDA ST., LOS ANGELES

ERIE
TANDEM PAVING ROLLERS

Include everything that makes for the best in Road Rollers

EDWARD R. BACON COMPANY
INCORPORATED
CONSTRUCTION ERBCo EQUIPMENT
51 MINNA ST., SAN FRANCISCO
Los Angeles Sacramento Fresno

The Architect and Engineer — August, 1923 — Vol. LXXIV, No. 2. Published monthly — $2.50 a year, 627 Foxcroft Building, San Francisco, California. Entered as second-class matter, November 2, 1905, at the Post Office at San Francisco, California, under the act of March 3, 1879.

For Wall Construction

— to keep up quality
— to keep down costs

Dickey Mastertile

Architects and builders are meeting the demand for *better construction at lower cost* by using the most economical of all building materials, DICKEY MASTERTILE.

It is adaptable for the construction of practically every type of load-bearing and curtain walls. It may be left *exposed*, covered with *cement plaster or stucco*, faced with *face brick* or *architectural terra cotta*.

Its economies not only arise from its *low unit cost* but from its *lightness yet strength*, the *speed* with which it may be erected, and from the fact that it usually *eliminates the need of furring*, the plaster being applied *directly to its interior surface*.

Defies Fire, Time and Weather.

Send for the Dickey Mastertile Building Manual.

DICKEY
FACE BRICK AND MASTERTILE

Manufactured by
Livermore Fire Brick Works
604 Mission Street
San Francisco

Manufactured by
California Brick Company
Builders' Exchange
Oakland

Under Same Management

SANSOME GARAGE, SAN FRANCISCO J. L. STEWART, Architect

California Steel Windows

MADE IN CALIFORNIA U.S.A.

The flat weather side of our sash bars is the best protection against corrosion, and permits the installation of an inexpensive, durable fly screen. This feature is very essential in Packing Houses, Creameries, Bakeries, etc.

Michel & Pfeffer Iron Works
HARRISON AND TENTH STREETS
SAN FRANCISCO, CALIF.

When writing to Advertisers please mention this magazine.

Architects' Specification Index

(For Index to Advertisements, see next page)

ASBESTOS MATERIALS
Johns-Manville Inc., of California, 500 Post street, San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.
Jones Bros. Asbestos Supply Co., Inc., 512 Second St., San Francisco.
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

ART METAL
Federal Ornamental Iron and Bronze Co., 16th St., and San Bruno Ave., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
California Artistic Metal & Wire Co., 349 Seventh street, San Francisco.

ARCHITECTURAL TERRA COTTA
Gladding, McBean & Company, Crocker Bldg., San Francisco.
Livermore Fire Brick Works, 604 Mission St., San Francisco.
Tropico Potteries, Inc., Glendale, Cal.

BANK FIXTURES AND INTERIORS
C. F. Weber & Co., 985 Market St., San Francisco.
Home Mfg. Co., 543 Brannan St., San Francisco.
Mullen Manufacturing Co., 64 Rausch St., San Francisco.
Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.

BANK SCREEN REFLECTORS
I. P. Frink, Inc., 77 O'Farrell Street, San Francisco.

BATHROOM ACCESSORIES
The Fairfacts Company, Inc., 234 W. 14th St., New York.

BEDS—WALL
California Wall Bed Co., 714 Market St., San Francisco.
Marshall & Stearns Co., Phelan Bldg., San Francisco.
Leverett T. Spaulding, 1041 Mission St., San Francisco.

BELTING AND PACKING
New York Belting and Packing Company, 519 Mission St., San Francisco.
H. N. Cook Belting Co., 401 Howard St., San Francisco.
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

BLACKBOARDS
C. F. Weber & Co., 985 Market St., San Francisco, Los Angeles and Reno, Nevada.
Stewart Sales Co., 247 Rialto Building, San Francisco.
Wentworth & Co., 539 Market Street, San Francisco.

BLINDS—VENETIAN AND DIFFUSELITE
The J. G. Wilson Corporation, 621 North Broadway, Los Angeles.
Western Blind & Screen Company, factory, Los Angeles; San Francisco representatives, Edward C. Dehn, Hearst Bldg., and C. F. Webber Co.

BOILERS
Birchfield Boiler Company, Tacoma, Washington. See advertisement for Coast agencies.
Kewanee Boiler Company, Factory Branch, Exposition Building, San Francisco.
Kewanee Water Supply System, Simonds Machinery Co., 117 New Montgomery St., San Francisco.
Main Iron Works, 1000 Sixteenth Street, San Francisco.

BONDS FOR CONTRACTORS
Bonding Company of America, Kohl Bldg., San Francisco.
Globe Indemnity Co., 444 California St., San Francisco.
Fidelity & Casualty Co. of New York, Balfour Bldg., San Francisco.
Standard Accident Insurance Company, California Commercial Union Building, San Francisco.

BOXBOARD FIBRE SHIPPING CASES
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

BRASS GOODS, CASTINGS, ETC.
H. Mueller Manufacturing Co., 635 Mission St., San Francisco.

BRICK FACE, COMMON, ENAMEL, GLAZED
Remillard Brick Company, Phelan Building, San Francisco.
Richmond Pressed Brick Co., Sharon Bldg., San Francisco. Plant at Richmond, Cal.
Livermore Fire Brick Works and California Brick Co., 604 Mission St., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.
Cannon & Co., Sacramento; and 77 O'Farrell St., San Francisco.

BRICK & CEMENT COATING
Armorite and Concreta, manufactured by W. P. Fuller & Co., all principal Coast cities.
Minwax Co., Inc., 22 Battery St., San Francisco and 653 S. Clarence St., Los Angeles.
The Paraffine Companies, Inc., 34 First St., San Francisco.
R. N. Nason & Co., 151 Potrero Ave., San Francisco.
Wadsworth, Howland & Co., Inc., Jas. Hambly & Son, 1333 E. 7th St., Los Angeles, and 229 Clay St., San Francisco.

BRICK STAINS
Samuel Cabot Mfg. Co., Boston, Mass., agencies in San Francisco, Oakland, Los Angeles, Portland, Tacoma and Spokane.
Armorite and Concreta, manufactured by W. P. Fuller & Co., all principal Coast cities.

BUILT-IN FIXTURES
Built-In Fixture Company, San Pablo Ave., near University Ave., Berkeley, and Hoosier Store, Pacific Building, San Francisco.

BUILDERS' HARDWARE
Joost Bros., agents for Russell & Erwin Hardware, 1053 Market St., San Francisco.
The Stanley Works, New Britain, Conn., Coast sales offices, San Francisco, Los Angeles, and Seattle, Wash.
Palace Hardware Company, Agents Corbin goods, 581 Market St., San Francisco.
Richards-Wilcox Mfg. Co., Aurora; Ewing-Lewis Co., 626 Underwood Bldg., San Francisco.

RALSTON IRON WORKS, Inc.

ESTABLISHED 1876

Office and Works
20th and Indiana Streets
SAN FRANCISCO
Phone Mission 5230

Structural Steel

Representing
Pauly Jail Building Co.

An Index to the Advertisements

	Page
All-in-One Company	138
American Face Brick Ass'n.	131
American Mail Chute Co.	157
American Marble and Mosaic Co.	42
American Rolling Mill Co.	43
American Window Glass Co.	129
Aristo Painting Co.	160
Atlas Heating & Ventilating Co.	150
Babcock Co., C. B.	48
Bacon, Edward R., Co.	4
Badt-Falk & Co.	149
Bartlett, John M.	145
Barrett & Hilp	148
Bass-Hueter Co.	33
Beckwith, Herbert	145
Beeco	159
Berkeley Electric Co.	158
Birchfield Boiler Co.	40
Brooks and Doerr	133
Browne - Langlais Electric Co.	158
Bowser & Co.	29
Bruce Company	39
Built-in-Fixture Company	126
Bull Dog Floor Clip Co.	17
Bunting Iron Works	47
Butte Electric & Mfg. Co.	158
Buttonlath Mfg. Co.	121
Cabot, Samuel Co.	155
Cadwallader, Gibson Co.	132
California Artistic Metal & Wire Co.	156
California Brick Company	5
California Steam & Plumbing Supply Co.	163
California Pottery Co.	40
California Stucco Products Co.	4
California Wall Bed Co.	136
Carter Bloxonend Flooring Co.	143
Central Electric Co.	161
Central Iron Works	156
Clinton Construction Co.	154
Coast Rock and Gravel Co.	168
Cobbledick-Kibbe Glass Co.	129
Coen Company	46
Coleman, Alex.	150
Columbia Marble Co.	142
Cook Belting Co.	42
Cook Marble Co.	13
Crane Co.	157
Cyclops Iron Works	154
Del Monte Properties Co.	140
Detroit Steel Products Co.	24
Dierrsen Co., C.	24
Direct Line Telephone Co.	158
Doell, Carl T.	150
Dolan Wrecking Co.	160
Drendell Electric Co.	159
Electric Appliance Company	14
Elevator Supplies Co., Inc.	141
Ellery Arms Co.	161
Evans, W. L.	44
Fairfacts Fixtures	3rd Cover
Federal Ornamental Iron Works	156
Fess System Co.	46
Fidelity & Casualty Co.	161
Fink & Schindler	160
Fire Protection Eng. Co.	154
Fire Retardent Products Co.	152
Flagg, Edwin H. Scenic Co.	146
Frink, I. P., Inc.	136
Fuller & Goepp	143
Fuller, W. P. & Co.	28
Garnett Young & Co.	14
General Fireproofing Co.	31
Gilley-Schmid Co.	144
Gladding, McBean & Co.	45
Globe Indemnity Co.	149
Golden Gate Iron Works	156
Grinnell Company of Calif.	154
Gunn, Carle Company	30
Haines, Jones & Cadbury Co.	139
Handy Self - Cleansing Flush Valve Co.	34
Hannah Bros.	146
Hauser Window Company	117
Haws Sanitary Faucet Co.	152
Hermann Safe Co.	10
Herrick Iron Works	156
Hicks, Wesley W.	30
Hillard, C. J.	142
Hill, Hubbell & Co.	134
Hoff Magnesite Co.	133
Holbrook, Merrill & Stetson	32
Holtzer-Cabot Electric Co.	2
Home Mfg. Co.	160
Hulting, Hurst & Hulting	154
Hunt & Co., Robert W.	133
Hunter & Hudson	144
Illinois Engineering Co.	154
Indiana Limestone Ass'n.	23
Ind. Automatic Spk'r Co.	10
Johnson, S. T.	47
Johns, Manville Co.	161
Johnson Service Co.	150
Jones Bros.	161
Joost Bros.	144
Judson Mfg. Co.	156
Kennedy Valve Co.	121
Kewanee Boiler Co.	132
King's Electrical Co.	155
Kinnear Mfg. Co.	29
Kissel, I. R.	146
Knowles, A.	148
Lannom Bros.	160
Larson-Siegrist Co., Inc.	145
Lawson & Drucker	150
Lawton & Vezey	146
Littlefield, R. W.	148
Lindgren & Swinerton, Inc.	40
MacGruer & Simpson	36
MacRorie-McLeran Co.	152
Main Iron Works	34
Magner Bros.	144
Mangrum & Otter	24
Marshall & Stearns	44
McCabe Hanger Mfg. Co.	26
McCray Refrigerator Co.	147
McLeran, R. Co.	149
McLaughlin, Jas. L.	160
McLaughlin Metal Works	34D
Myers & Schwartz	151
Michel & Pfeffer Iron Works	6
Minwax Co., Inc.	134
Montague Range & Furnace Co.	130
Monson Bros.	146
Mortenson Con. Co.	156
Mott Company	159
Mueller, H., Mfg. Co.	159
Mullen Mfg. Co.	160
Musto Sons-Keenan Co.	13
Nason, R. N. & Co.	12
National Mill & Lumber Co.	32
National Terra Cotta Society	123
NePage, McKinney Co.	158
Newberry Electric Co.	158
Newman, H. G.	150
New York Belting Co.	163
Nordstrom, David	148
Oak Flooring Bureau	19
Ocean Shore Iron Works	162
Old Mission Portland Cement	35
Otis Elevator Company	168
Pacific Coast Steel Co.	162
Pacific Elevator Company	162
Pacific Electric Clock Co.	158
Pacific Fire Extinguisher Co.	18
Pacific Foundry Co.	133
Pacific Gas & Electric Co.	20
Pacific Mfg. Co.	145
Pacific Materials Co.	48
Pacific Plumbing Fixture Co.	2nd Cover
Pacific Rolling Mills	22
Palace Hardware Co.	36
Palm Iron Works	22
Paraffine Companies	135
Parker, K. E. Co.	148
Pelton Water Wheel Co.	11
Peterson, Carl H.	149
Petrium Sanitary Sink Co.	140
Phillips, Chas. T. Co.	154
Picard, W. H.	150
Pittsburgh Water Heater Co.	144
Pope & Talbot	130
Plant Rubber & Asbestos Works	4
Potter Radiator Co.	34
Portland Cement Association	37
Quandt, A. & Sons	9
Ralston Iron Works	7
Randall Control Corp.	144
Ray Mfg. Co.	47
Raymond Granite Co.	25
Richmond Brick Co.	137
Remillard Brick Co.	161
Roberts Mfg. Company	134
Robertson Co., H. H.	147
Rotary Oil Burner Company	47
Rumpf, H.	129
Ruud Heater Co.	144
Ryan, M. E.	18
Sandusky Cement Co.	125
Santa Fe Lumber Co.	130
Scott Company	145
Schrader Iron Works	156
Simmons, O. M., Co.	12
Simonds Machinery Co.	42
Sloane, W. & J.	17
Smith & Egge Mfg. Co.	24
Sommer, I. M.	148
Soule, Edw. L. Co.	132
Spaulding, L. T.	160
Spencer Elevator Co.	149
S. & S. Tile Co.	154
Standard Electric Time Co.	4
Standard Fence Co.	149
Standard Varnish Works	9
Stanley Works	129
Steelform Contracting Co.	148
Steffens-Lomax Co.	141
Stewart Sales Co.	16
St. John, Robert L.	16
Strable Hardwood Co.	38, 152
Sunset Lumber Co.	130
Tittle, H. S.	158
Toledo Scale Co.	11
Tokheim Oil Co.	134
Tompkins-Kiel Marble Co.	41
Tormey Co.	144
Tropico Potteries, Inc.	157
Trost, Robert	146
Truscon Steel Co.	34A
Uhl Bros.	42
Union Construction Co.	36
United Alloy Steel Corp.	161
United Materials Co.	137
Universal Exhibits	162
U. S. Elaterite Products Co.	34
U. S. Metal Products Co.	27
Van Emon Elevator Co.	145
Van Fleet-Freear Co.	20
Vogt, Alfred	146
Vonnegut Hardware Co.	15
Vermont Marble Co.	142
Vukicevich & Bagge	148
Wadsworth, Howland & Co.	2
Wayne Tank and Pump Co.	34B & C
Walter, D. N. & E. Co.	142
Weber, C. F. Co.	157
Wells, A. F.	145
Wentworth, F. W.	161
West Coast Porcelain Co.	Back Cover
Western Asbestos & Magnesia Co.	22
Western Blind & Screen Co.	21
Western States Seating Co.	145
Western Iron Works	22
Westinghouse Mfg. Co.	3
White Bros.	127
Wickwire Spencer Steel Corp.	40
Williams Radiator Co.	147
Wilson, J. G., Corp.	26
Wilson, W. F. Co.	150
Witt, G. E.	48
Zelinsky, D. & Co.	149

A. Quandt & Sons

OUR WORK IS THE BEST GUARANTEE OF THE QUALITY OF OUR SERVICE

Painters - Decorators

374 GUERRERO ST. **San Francisco** — SINCE 1885 — 3217 So. CENTRAL AVE. **Los Angeles**

ARCHITECTS' SPECIFICATION INDEX—Continued

BUILDING MATERIALS, SUPPLIES, ETC.
- Pacific Materials Co., Underwood Bldg., San Francisco.
- Waterhouse-Wilcox Co., 523 Market St., San Francisco.
- C. H. Jensen Co., Call Building, San Francisco.
- John R. Steffens-Lomax Co., Monadnock Bldg., San Francisco.
- The General Fireproofing Company, 20 Beale Street, San Francisco

BUILDING PAPER
- The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

BUILDING TILE (Borned Clay)
- California Brick Co., 604 Mission St., San Francisco.

CABINET MAKERS
- Home Manufacturing Company, 543 Brannan St., San Francisco.
- Mullen Manufacturing Company, 64 Rausch St., San Francisco.
- Lannom Bros. Mfg. Co., 5th and Magnolia Sts., Oakland.
- Parific Mfg. Co., San Francisco, Los Angeles and Oakland.

CEMENT
- Atlas Portland Cement Co., agencies in all principal Coast cities.
- Best Bros. Keene's Cement Co., John R. Steffens-Lomax Co., Agents, Monadnock Bldg., San Francisco.
- Old Mission Portland Cement Co., Mills Bldg., San Francisco.
- Medusa Stainless White Cement, plain and waterproofed, carried in stock and sold by leading building supply dealers in California, Oregon and Washington.
- The Paraffine Companies, San Francisco, and principal Coast Cities.

CEMENT EXTERIOR WATERPROOF PAINT
- Armorite, sold by W. P. Fuller & Co., all principal Coast cities.
- Minwax Co., Inc., 22 Batery St., San Francisco and 653 S. Clarence St., Los Angeles.
- The General Fireproofing Company, 20 Beale Street, San Francisco

CEMENT STUCCO
- "California" sold by Atlas Mortar Company, Holbrook building, San Francisco.

CEMENT TESTS—CHEMICAL ENGINEERS
- Robert W. Hunt & Co., 251 Kearny St., San Francisco.

CLAY PRODUCTS
- California Brick Co. and Livermore Fire Brick Works, 604 Mission St., San Francisco.
- Cannon & Co., Sacramento, Cal.
- Gladding, McBean & Co., Crocker Bldg., San Francisco.
- Los Angeles Pressed Brick Co., Frost Bldg., Los Angeles.
- Tropico Potteries, Inc., Glendale, Cal.
- United Materials Co., Sharon Bldg., San Francisco.

CLOCKS—ELECTRIC TIME
- Standard Electric Time Co., 461 Market St., San Francisco.
- Pacific Electric Clock Company, 86 Third St., San Francisco.

COLD STORAGE PLANTS
- Cyclops Iron Works, 837 Folsom St., San Francisco.

COMPOSITION FLOORS
- "Linotol" plastic flooring, Hill, Hubbell & Co., 115 Davis St., San Francisco; 410 San Fernando Bldg., Los Angeles.
- Western Asbestos Magnesia Company, 25 South Park, San Francisco.
- Hoff Magnesite Co., San Francisco. Miller & Alf, 337 Monadnock Bldg., San Francisco, general agents.

CONCRETE BUILDING ACCESSORIES
- John R. Steffens-Lomax Co., 951 Monadnock Bldg., San Francisco.

CONCRETE OR CEMENT HARDENER
- Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
- The General Fireproofing Company, 20 Beale Street, San Francisco

CONCRETE MIXERS
- Foote and Jaeger mixers sold by Edward R. Bacon Co., 51 Minna St., San Francisco, also Los Angeles.

CONCRETE REINFORCEMENT
- Edw. L. Soule Co., Rialto Bldg., San Francisco.
- Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
- Clinton Welded Wire Fabric, Wickwice Spencer Steel Corporation, 144 Townsend St., San Francisco.
- Judson Mfg. Co., 817-821 Folsom St., San Francisco.
- Pacific Coast Steel Company, Rialto Bldg., San Francisco.
- Triangle Mesh Fabric. Sales agents, Pacific Materials Co., 525 Market St., San Francisco.
- Truscon Steel Co., 709 Mission St., San Francisco.
- Badt-Falk Co., Call-Post Bldg., San Francisco.

CONDUITS
- "Sherarduct," Garnett Young & Company, 612 Howard St., San Francisco.

CONTRACTORS, GENERAL
- Barrett & Hilp, 918 Harrison St., San Francisco.
- Herbert Beckwith, Everson Bldg., Oakland.
- Larsen-Siegrist Co., Inc., 807 Claus Spreckels Bldg., San Francisco.
- Lindgren-Swinerton, Inc., Standard Oil Building, San Francisco
- R. W. Littlefield, 357-12th St., Oakland.
- K. E. Parker Co., Inc., Clunie Bldg., San Francisco.
- Dinwiddie Construction Co., Crocker Bldg., San Francisco.
- John M. Bartlett, 357 Twelfth St., Oakland.
- Clinton Construction Company, 923 Folsom St., San Francisco.
- Monson Bros., 251 Kearny St., San Francisco.
- Geo. Wagner, 251 Kearny St., San Francisco.
- T. B. Goodwin, 180 Jessie St., San Francisco.
- McLeran & Co., R., Hearst Bldg., San Francisco.

SATINETTE WHITE ENAMEL

FLATTINE CABINET FINISH
ELASTICA INTERIOR AND ELASTICA EXTERIOR

Standard Varnish Works

55 STEVENSON STREET — SAN FRANCISCO

THE HERMANN SAFE CO.

Manufacturers of Fire and Burglar Proof Safes, Vaults and Safe Deposit Boxes

Also Representatives for the

YORK SAFE & LOCK CO. OF YORK, PA.

216-224 Fremont Street San Francisco, Cal.

ARCHITECTS' SPECIFICATION INDEX—Continued

Robert Trost, 26th and Howard Sts., San Francisco.
I. M. Sommer, 401 Balboa Bldg., San Francisco.
Jas. L. McLaughlin, 251 Kearny St., San Francisco.
Alfred H. Vogt, 185 Stevenson St., San Francisco.
Lange and Bergstrom, Sharon Bldg., San Francisco and Washington Bldg., Los Angeles.
David Nordstrom, 4146 Emerald Street, Oakland.
Carl T. Peterson, 185 Stevenson St., San Francisco.

CONTRACTORS' EQUIPMENT
Edward R. Bacon Co., 51 Minna St., San Francisco, and Los Angeles.

CONVENIENCE OUTLETS
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St.

CORK TILE
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

CRUSHED ROCK
Coast Rock & Gravel Co., Call-Post Bldg., San Francisco.

CURTAINS—STEEL, ROLLING, FIREPROOF
J. G. Wilson Corp., 621 N. Broadway, Los Angeles.

DAMP-PROOFING AND WATERPROOFING
Armorite Damp Resisting Paint, made by W. P. Fuller & Co., San Francisco.
"Imperial," manufactured by Brooks & Doerr, Merchants National Bank Building, San Francisco.
Minwax Co., Inc., 22 Battery St., San Francisco, and 653 S. Clarence St., Los Angeles.
Samuel Cabot Co., Boston; represented in San Francisco by Pacific Materials Co., Underwood Bldg., San Francisco.
"Pabco" Damp-Proofing Compound, sold by the Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.
The General Fireproofing Company, 20 Beale Street, San Francisco

DOOR HANGERS
McCabe Door Hanger Company, leading hardware stores.
Pitcher Hanger, sold by National Mill & Lumber Co., 326 Market St., San Francisco.
Stanley Works, New Britain, Conn... Monadnock Bldg., San Francisco.

DOORS—VANISHING
W. L. Evans, 700 Block B., Washington, Ind.

DRAIN PIPE AND FITTINGS
"Corrosiron" Acid Proof, manufactured by Pacific Foundry Co., Harrison and 18th Sts., San Francisco.

DRINKING FOUNTAINS
Hawa Sanitary Drinking Faucet Co., 1808 Harmon St., Berkeley, and C. F. Weber & Co., San Francisco and Los Angeles.
Crane Company, San Francisco, Oakland, and Los Angeles.
Pacific Porcelain Ware Co., 67 New Montgomery St., San Francisco.
Haines, Jones & Cadbury Co., 857 Folsom St., San Francisco.

DUMB WAITERS
Spencer Elevator Company, 166-7th St., San Francisco.
San Francisco Elevator Company, Inc., 860 Folsom St., San Francisco.
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.

ELECTRICAL APPLIANCE SUPPLIES
Electric Appliance Company, 809 Mission St., San Francisco.

ELECTRICAL CONTRACTORS
Butte Electrical Equipment Company, 530 Folsom St., San Francisco.
Butte Electric & Manufacturing Co., 534 Folsom St., San Francisco.
Central Electric Company, 177-79 Minna St., San Francisco
King's Electrical Co., Builder's Exchange, Oakland.
NePage, McKenny Co., 589 Howard St., San Francisco.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.
H. S. Tittle, 766 Folsom St., San Francisco.
Brown-Langlais Electrical Construction Co., 313 Fifth Street, San Francisco.
A. F. Wells Company, 155 Second St., San Francisco.
M. E. Ryan, Redwood City, and 251 Tehama St., San Francisco.
Newberry Electric Company, Alta Bldg., San Francisco

ELECTRIC PLATE WARMER
The Prometheus Electric Plate Warmer for residences, clubs, hotels, etc. Sold by M. E. Hammond, Pacific Bldg., San Francisco.

ELECTRICAL SUPPLIES AND EQUIPMENT
"H. & H. Switches," Garnett Young & Co., 612 Howard St., San Francisco.
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St.
Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco.

ELEVATORS—PASSENGER and FREIGHT
Pacific Elevator & Equipment Co., 1129 Howard Street, San Francisco.
Otis Elevator Company, Stockton and North Point, San Francisco.
Spencer Elevator Company, 166-7th St., San Francisco.
San Francisco Elevator Co., 860 Folsom St., San Francisco.
Union Construction Company, Balfour Bldg., San Francisco.
Van Emon Elevator Company, 1159 Howard St., San Francisco.

ELEVATOR MOTORS AND CONTROL
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., and First National Bank Bldg., San Francisco, Calif.

Telephone Garfield 204

Independent Automatic Sprinkler Company

Fire Protection Engineers

Approved Devices 72 Natoma Street, San Francisco

TOLEDO AUTOMATIC SPRINGLESS SCALES
12 OUNCES TO 20 TONS
for Factories, Warehouses, Wholesale Houses—in fact any kind of business where accurate weight is desired
676 MISSION ST. Phone Sutter 250 **TOLEDO SCALE CO.** SAN FRANCISCO California

ARCHITECTS' SPECIFICATION INDEX—Continued

ELEVATOR SIGNALS, DOOR EQUIPMENT, ETC.
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.
Randall Control & Hydrometric Corporation, 265A Minna St., San Francisco, and 523 Central Bldg., Los Angeles.

ENGINEERS—ELECTRICAL
Robert L. St. John, 1011 Flat Iron Bldg., San Francisco.

ENGINEERS — CONSULTING, ELECTRICAL, MECHANICAL
Hunter & Hudson, Rialto Bldg., San Francisco.
Robert L. St. John, 1011 Flat Iron Bldg., San Francisco
Charles T. Phillips Company, Bank of Italy Bldg., San Francisco, and Roberts Bldg., Los Angeles.

FAIENCE TILE
Tropico Potteries, Inc., Glendale, Cal.

FELTS
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FENCES—WIRE AND IRON
Standard Fence Company, 432 Bryant, San Francisco and 60th and Lowell Sts., Oakland.

FIRE BRICK, TILE & CLAY
Livermore Fire Brick Works, 604 Mission St., San Francisco.

FIRE EXIT LATCHES
Vonnegut Hardware Co., Indianapolis, Ind., represented in San Francisco by Abeel Jensen Co., Call Building.

FIRE ESCAPES
Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sarramento.
Western Iron Works, 141 Beale St., San Francisco.

FIRE HOSE RACKS
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

FIRE-PROOF DOORS
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
U. S. Metal Products Co., 330-10th St., San Francisco.
Kinnear Mfg. Co., represented in San Francisco by Pacific Materials Co., Underwood Bldg.
The J. G. Wilson Corporation, 621 North Broadway, Los Angeles.

FIRE SPRINKLERS—AUTOMATIC
Fire Protection Engineering Co., 67 Main St., San Francisco.
Grinnell Company of the Pacific, 453 Mission St., San Francisco.
Independent Automatic Sprinkler Co., 72 Natoma St., San Francisco.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.

FIRE RETARDING PAINT
The Paraffine Companies, Inc., 34 First St., San Francisco.
Fire Retardent Products Co., 2838 Hannah St., Oakland, Cal.

FIXTURES—BANK, OFFICE, STORE, ETC.
Home Manufacturing Company, 543 Brannan St., San Francisco.
Mullen Manufacturing Co., 64 Rausch St., San Francisco.
C. F. Weber & Co., 985 Market St., San Francisco, and 210 N. Main St., Los Angeles, Cal.

FLOORS, BLOCK
Carter, Bloxonend Flooring Co., Kansas, Mo., represented on Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

FLOOR CLIPS
Bull Dog Floor Clip Sales Co., 77 O'Farrell St., San Francisco, and 600 Metropolitan Bldg., Los Angeles.

FLOORING, HEAVY DUTY
Carter, Bloxonend Flooring Co., Kansas, Mo., represented on Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

FLOORS—TILE, CORK, ETC.
Mangrum & Otter, 827 Mission St., San Francisco.

FLOOR VARNISH
Bass-Hueter and San Francisco Pioneer Varnish Works, 816 Mission St., San Francisco.
Fifteen for Floors, made by W. P. Fuller & Co., San Francisco.
Standard Varnish Works, Chicago, New York and San Francisco.
R. N. Nason & Co., San Francisco and Los Angeles.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Murphy's Transparent Floor, Uhl Bros., San Francisco, Seattle, Portland, Oakland, Los Angeles.

FLOORS—HARDWOOD
Oak Flooring Bureau, Ashland Block, Chicago, Ill.
Cadwallader, Gibson Co., 5th & Brannan St., San Francisco.
Parrott & Co., 320 California St., San Francisco.
Strable Hardwood Company, 511 First St., Oakland.
E. L. Bruce Co., Manufacturers, Memphis, Tenn.
White Bros., 5th and Brannan Sts., San Francisco.

FLOOR TREATMENT—HARDWOOD, COMPOSITION AND CONCRETE
Minwax Co., Inc., 22 Battery St., San Francisco and 653 S. Clarence St., Los Angeles.

FLOORS—MASTIC—FLOOR COVERING
Hill, Hubbell & Company, 115 Davis St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FLUE LINING
California Brick Company, 604 Mission St., San Francisco.

FLUSH VALVES
Handy Self-Cleaning Flush Valve Co., 731 Folsom St., San Francisco.

FUEL OIL SYSTEMS
S. T. Johnson Co., 1337 Mission St., San Francisco.
S. F. Bowser & Co. Inc., 612 Howard St., San Francisco.
Wayne Tank and Oil Co., 430 Fourth St., San Francisco.

THE PELTON WATER WHEEL CO.
Hydraulic Engineers
Light-Duty High-Head Pumps for Tank and Other Building Service
Heavy-Duty Pumps for Municipal and General Water Supply
2022 Harrison Street San Francisco

NASON'S OPAQUE FLAT FINISH A VALUABLE OIL PAINT FOR WALLS, CEILINGS, ETC.
Made in California to stand Pacific Coast climatic conditions
R. N. Nason & Co., Paint Makers
PORTLAND 151 Potrero Ave.—SAN FRANCISCO—436 Market St. SEATTLE

ARCHITECTS' SPECIFICATION INDEX—Continued

FURNACES—WARM AIR
Mangrum & Otter, 827 Mission St., San Francisco.
Montague Range and Furnace Co., 826 Mission St., San Francisco.
C. B. Babcock Company, 768 Mission St., San Francisco.

FURNITURE—OFFICE, SCHOOL, CHURCH,
Home Manufacturing Company, 543 Brannan St., San Francisco.
C. F. Weber & Co., 985 Market St., San Francisco.
F. W. Wentworth & Co., 39 Second St., San Francisco.
W. & J. Sloane, 216 Sutter St., San Francisco.
Western States Seating Co., 133 Kearny St., San Francisco.

FURRING TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

GARAGE HARDWARE
The Stanley Works, New Britain, Conn., Coast sale offices, San Francisco, Los Angeles and Seattle, Wash.

GLASS
American Window Glass Co., represented by L. H. Butcher Co., 862 Mission St., San Francisco.
Cobbledick-Kibbe Glass Co., 666 Howard St., San Francisco.
Fuller & Goepp, 32 Page St., San Francisco, and Jackson, at Eleventh St., Oakland.
W. P. Fuller & Company, all principal Coast cities.

GRADING, WRECKING, ETC.
Dolan Wrecking & Construction Co., 1607 Market St., San Francisco.

GRANITE
Raymond Granite Co., Potrero Ave., and Division St., San Francisco.

GRAVEL AND SAND
Coast Rock & Gravel Co., Call-Post Bldg., San Francisco.
Del Monte White Sand, sold by Del Monte Properties Co., Crocker Bldg., San Francisco.

GYMNASIUM EQUIPMENT—LOCKERS, ETC.
Ellery Arms Co., 583 Market St., San Francisco.
George Trask, Durand Steel Locker Co., 76 Sacramento St., San Francisco.

HARDWARE
Joost Bros., agents for Russell & Erwin Hardware, 1053 Market St., San Francisco.
The Stanley Works, New Britain, Conn.; Coast sales offices, San Francisco, Los Angeles, and Seattle, Wash.
Corbin hardware, sold by Palace Hardware Co., 581 Market St., San Francisco.
Vonnegut hardware, sold by Abeel-Jensen Co. Call Bldg., San Francisco.
Richards-Wilcox Mfg. Co., Aurora, Ill.; Ewing-Lewis Co., 626 Underwood Building, San Francisco.

HARDWOODS
White Brothers, 5th and Brannan Streets, San Francisco.

HEATING AND VENTILATING CONTRACTORS
Atlas Heating and Ventilating Company, Inc., Fourth and Freelon Sts., San Francisco.
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St., San Francisco.
Hateley & Hateley, Mitau Bldg., Sacramento.
Mangrum & Otter, 827-831 Mission St., San Francisco.
Lawson & Drucker, 450 Hayes St., San Francisco.
Carl T. Doell, 467 21st St., Oakland.
Luppen, Hawley & Thing, 906 7th St., Sacramento.
William F. Wilson Co., 328 Mason St., San Francisco.
W. H. Picard, 5656 College Ave., Oakland.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.
Scott Company, 243 Minna St., San Francisco.
H. G. Newman Co., 2004 Telegraph Ave., Oakland.

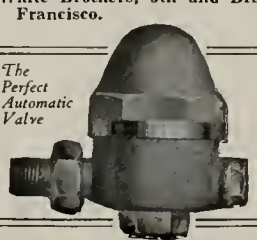
HEATING & VENTILATING EQUIPMENT
W. S. Haines & Co.'s steam specialties. O. M. Simmons Company, 115 Mission St., San Francisco.
Hulting, Hurst & Hulting, representing Jas. P. Marsh Co., Monadnock Bldg., San Francisco.
Illinois Engineering Co., Pacific Bldg., San Francisco.
Williams Radiator Company, 571 Mission St., San Francisco.

HEATERS, WATER-GAS, ELECTRIC, ETC.
Pittsburg Water Heater Company, 478 Sutter St., San Francisco.
Rund Automatic Water Heater, sold by Rund Heater Company, 431 Sutter St., San Francisco.
C. B. Babcock Company, representing General Gas Light Company, 768 Mission St., San Francisco.
Wesix Heaters sold by Wesley W. Hicks, Rialto Building, San Francisco.
McLaughlin Metal Works, Sacramento.

HEATERS, GAS GRATES, RADIATORS, ETC.
General Gas Light Company, 768 Mission St., San Francisco.
Ra-Do Fumeless Gas Radiators, Potter Radiator Corporation, 478 Sutter St., San Francisco
Humphrey Radiantfire, sold by Rudd Heater Company, 431 Sutter St., San Francisco.
Williams Radiator Company, "Gas Steam Radiators," 571 Mission St., San Francisco.

HOLLOW BUILDING TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

HOLLOW TILE BLOCKS
Cannon & Co., plant at Sacramento; 77 O'Farrell St., San Francisco.
California Brick Company, 604 Mission St., San Francisco.
Gladding, McBean & Co., San Francisco, Los Angeles, Oakland and Sacramento.



W. S. Haines & Co., Steam Specialties, Vacuum and Vapor Systems of Heating
"Twenty-four years of satisfactory service."
(See Page 1503 of Sweet's Catalogue)
O. M. SIMMONS CO. 115 Mission St., San Francisco
Phone: Douglas 5497

Clarence E. Musto, Pres. Joseph B. Keenan, Vice-Pres. Guido J. Musto, Sec'y & Treas.

JOSEPH MUSTO SONS--KEENAN CO.

Phone Franklin —6365— MARBLE Office and Mills: 535-565 North Point St., SAN FRANCISCO. CAL.

ARCHITECTS' SPECIFICATION INDEX—Continued

HOSE—UNDERWRITERS UNLINED LINEN—RUBBER
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

HOSPITAL FIXTURES
Mott Company of California, 553 Mission St., San Francisco.

HOSPITAL SIGNAL SYSTEMS
Chicago Signal Co., represented by Garnett Young & Co., 612 Howard St., San Francisco.
Holtzer-Cabot Electric Company, San Francisco Branch, Aronson Building.

ICE MAKING MACHINERY
Cyclops Iron Works, 837 Folsom St., San Francisco.

INCINERATORS
The Incinerite, sold by M. E. Hammond, Mezzanine, Pacific Building, San Francisco.

INDUSTRIAL LIGHTING EQUIPMENT
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

INGOT IRON
"Armco" brand, manufactured by American Rolling Mill Company, Middletown, Ohio, and 10th and Bryant Sts., San Francisco.

INSPECTIONS AND TESTS
Robert W. Hunt & Co., 251 Kearny St., San Francisco.

INSULATION
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

JAIL EQUIPMENT
Ralston Iron Works, 20th and Indiana Sts., San Francisco.

LAMP POSTS, ELECTROLIERS, ETC.
J. L. Mott Iron Works, 553 Mission St., San Francisco.

LANDSCAPE ARCHITECT
Emerson Knight, 704 Market St., San Francisco.

LANDSCAPE GARDENERS
MacRorie-McLaren Co., 514-516 Phelan Bldg., San Francisco.

LATHING AND PLASTERING
MacGruer & Simpson, 226 Tehama St., San Francisco.
A. Knowles, Call-Post Bldg., San Franciaco.

LATHING MATERIAL—WIRE, METAL, ETC.
Buttonlath Manufacturing Co., Los Angeles and 207 Balboa Bldg., San Francisco.
Pacific Materials Co., 525 Market St., San Francisco.
The General Fireproofing Company, 20 Beale Street, San Francisco
Truscon Steel Co., 709 Mission Street, San Francisco.
Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.

LIGHT, HEAT AND POWER
Great Western Power Company, Stockton St., near Sutter, San Francisco.
Pacific Gas & Electric Co., Sutter St., San Francisco.

LIGHTING FIXTURES
Benjamin Electric Mfg. Co., New York, Chicago and San Francisco.
D. Dicrssen Co., 20 Second Street, San Francisco. Distributors Solar-Lite fixtures.
Electric Appliance Company, 809 Mission St., San Francisco.
Roberts Mfg. Co., 663 Mission St., San Francisco.

LIMESTONE, INDIANA
Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana.

LINOLEUM
D. N. & E. Walter & Co., 562 Mission St., San Francisco.
The Paraffine Companies, factory in Oakland; office, 34 First St., near Market, San Francisco.
W. & J. Sloane, 216 Sutter St., San Francisco.
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

LINOTILE
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

LUMBER
Hart-Wood Lumber Co., Fifth and Berry Sts., San Francisco.
Pacific Manufacturing Company, San Francisco, Oakland, Los Angeles and Santa Clara.
Pope & Talbot, foot of Third St., San Francisco.
Santa Fe Lumber Co., 16 California St., San Francisco.
Sunset Lumber Company, First and Oak Sts., Oakland.
White Bros., 5th and Brannan Sts., San Francisco.

MAIL CHUTES
American Mailing Device Corp., represented on Pacific Coast by Waterhouse-Wilcox Co., 523 Market St., San Francisco.

MANTELS—WOOD, TILE, ETC.
Mangrum & Otter, 827-831 Mission St., San Francisco.

MARBLE
American Marble and Mosaic Co., 25 Columbus Square, San Francisco.
Ray Cook Marble Company, foot of Powell St., Oakland.
Joseph Musto Sons, Keenan Co., 535 N. Point St., San Francisco.
Vermont Marble Co., Coast branches, San Francisco, Portland and Tacoma.
Tompkins-Kiel Marble Company, 505 Fifth Ave., New York; also Chicago, Philadelphia and San Francisco.

RAY COOK MARBLE CO.
IMPORTED AND DOMESTIC MARBLES
For Building Construction
Factory and Office, foot of Powell St., Oakland Phone Piedmont 1009

ELECTRIC APPLIANCE COMPANY
ELECTRICAL SUPPLIES
AUTOMOTIVE SUNDRIES RADIO EQUIPMENT
809 MISSION STREET, SAN FRANCISCO
Phone Sutter 4900

ARCHITECTS' SPECIFICATION INDEX—Continued

Columbia Marble Co., 413 Rialto Bldg., San Francisco.

METAL DOORS AND WINDOWS
Waterhouse-Wilcox Co., Inc., 523 Market St., San Francisco.
U. S. Metal Products Co., 330 Tenth St., San Francisco.

METAL FURNITURE
Forderer Cornice Works, 269 Potrero Ave., San Francisco.

METAL STORE FRONTS
Cobbledick-Kibbe Glass Company, 666-8 Howard street, San Francisco, and Washington at Third St., Oakland.

METAL TOILET—PARTITIONS
John R. Steffens-Lomax Co., 951 Monadnock Bldg., San Francisco.

MILL WORK
Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.
National Mill and Lumber Co., San Francisco and Oakland.
Lannom Bros. Mfg. Co., 5th and Magnolia Sts., Oakland.

OIL BURNERS
Bunting Iron Works, 1215 First Nat. Bank Bldg., San Francisco.
Coen Co., Inc., 112 Market St., San Francisco
Fess System Co., 220 Natoma St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
G. E. Witt Co., 862 Howard St., San Francisco.
W. S. Ray Mfg. Company, Rialto Bldg., San Francisco, and 2206 San Pablo Ave., Oakland.
Rotary Oil Burner Company, 159 Twelfth St., Oakland.

OIL STORAGE AND DISTRIBUTING STATIONS
S. F. Bowser & Co., Inc., 612 Howard St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
Wayne Oil Tank & Pump Co., 430 Fourth St., San Francisco; 830 S. Los Angeles St., Los Angeles.

ORNAMENTAL IRON AND BRONZE
California Artistic Metal and Wire Co., 349 Seventh St., San Francisco.
Federal Ornamental Iron and Bronze Co., 16th St., and San Bruno Ave., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
C. J. Hillard Company, Inc., 19th and Minnesota Sts., San Francisco.
Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.

PANIC DOORS
Vonnegut hardware, sold by Abeel-Jensen Co. Call Bldg., San Francisco.

PAINT FOR CEMENT AND STUCCO
Wadsworth, Howland & Co., Inc., Jas. Hambly & Son, 1333 E. 7th St., Los Angeles, and 229 Clay St., San Francisco.

PAINT FOR STEEL STRUCTURES, BRIDGES, ETC.
The Paraffine Companies, Inc., 34 First St., San Francisco.
Premier Graphite Paint and Pioneer Brand Red Lead, made by W. P. Fuller & Co., San Francisco.
Hill, Hubbell & Company, 115 Davis St., San Francisco.
U. S. Elaterite Products Co. of the Pacific, American National Bank Building, San Francisco.

PAINTING, TINTING, ETC.
I. R. Kissel, 1747 Sacramento St., San Francisco.
D. Zelinsky & Sons, San Francisco and Los Angeles.
The Tormey Co., 681 Geary St., San Francisco.
A. Quandt & Son, 374 Guerrero St., San Francisco.
Artistic Painting Company, 39 Tehama St., San Francisco.

PAINTS, OILS, ETC.
Magner Bros., 414-424 Ninth St., San Francisco.
Bass-Hueter Paint Co., Mission, near Fourth St., San Francisco and all principal Coast cities.
R. N. Nason & Company, San Francisco, Los Angeles, Portland and Seattle.
W. P. Fuller & Co., all principal Coast cities.
Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Fire Retardent Products Co., 2838 Hannah St., Oakland, Cal.
Uhl Bros., San Francisco, Los Angeles, Oakland, Portland, and Seattle.

PARTITIONS—FOLDING AND ROLLING
J. G. Wilson Corporation, 621 N. Broadway, Los Angeles; Waterhouse-Wilcox Co., Underwood Bldg., San Francisco.

PARTITION TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

PILE DRIVING AND DREDGING
Western Construction Company, 24 California St., San Francisco.

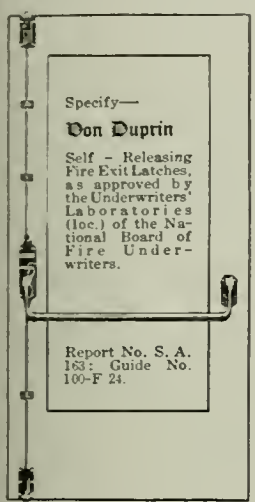
PLASTERING CONTRACTORS
A. Knowles, Call Bldg., San Francisco.
MacGruer & Simpson, 266 Tehama St., San Francisco.

PLUMBING CONTRACTORS
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St., San Francisco.

SILENT CALL **Chicago HOSPITAL** SIGNAL SYSTEMS
GARNETT YOUNG AND COMPANY
Pacific Coast Sales Engineers
612 Howard St., San Francisco
Seattle Los Angeles Portland

Von Duprin

Self-Releasing Fire Exit Latches


Specify—
Von Duprin
Self - Releasing Fire Exit Latches, as approved by the Underwriters' Laboratories (Inc.) of the National Board of Fire Underwriters.
Report No. S. A. 163: Guide No. 100-F 24.

Safeguarding Lives

Perhaps no other part of a building is quite as important as the **Von Duprin** latches, for their task is to safeguard the lives of those who work or play or live in the building.

They perform this task by making exit easy and sure at all times.

In daily use they simplify door operation, while in time of panic they prevent the fatal jam at the exit doors, and enable every person reaching the doors to get out instantly.

Merely as convenient, long-wearing door hardware, **Von Duprins** are worth all they cost; in time of emergency their value is priceless.

Ask us for Catalog 12-L, or see "Sweet's," pages 1323-1327.

VONNEGUT HARDWARE CO.
Indianapolis, Ind.

Moorehead Knitting Mills,
Harrisburg, Pennsylvania
C. Howard Lloyd, Architect

BLACKBOARDS
First Grade Natural Slate Green or Black Composition Board
Estimates Given for Complete Installations School Furniture and Supplies
STEWART SALES CO.
247 Rialto Building San Francisco. Cal.

ARCHITECTS' SPECIFICATION INDEX—Continued

Doell, Carl T., 467 21st St., Oakland.
Hateley & Hatelcy, Mitau Bldg., Sacramento.
Scott Co., Inc., 243 Minna St., San Francisco.
Wm. F. Wilson Co., 328 Mason St., San Francisco.
Luppen, Hawley & Thing, 906 7th St., Sacramento.
W. H. Picard, 5656 College Ave., Oakland.
H. G. Newman Company, 2004 Telegraph Ave., Oakland.

PLUMBING SUPPLY HOUSES
Crane Company, all principal coast cities.
Haines, Jones & Cadbury Co., 857 Folsom St., San Francisco.
H. Mueller Manufacturing Company, 635 Mission St., San Francisco.
Holbrook, Merrill & Stetson, 64 Sutter St., San Francisco.
J. L. Mott Iron Works, D. H. Gulick, selling agent, 553 Mission St., San Francisco.
Pacific Sanitary Manufacturing Co., 67 New Montgomery St., San Francisco.
West Coast Porcelain Manufacturers, Oceanic Bldg., San Francisco.

POLES AND PILING
Santa Fe Lumber Co., 16 California St., San Francisco.

PUMPS—HAND OR POWER
Chicago Pump Co., represented by Garnett, Young & Co., 612 Howard St., San Francisco.
Simonds Machinery Co., 117 New Montgomery St., San Francisco.
Ocean Shore Iron Works, 558 Eighth St., San Francisco.
Pelton Water Wheel Co., 2022 Harrison St., San Francisco.
S. F. Bowser & Co., Inc., 612 Howard St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
Wayne Tank & Pump Co., 430 Fourth St., San Francisco; 830 S. Los Angeles St., Los Angeles.
Byron Jackson Iron Works, 55 New Montgomery St., San Francisco.

RADIO EQUIPMENT
Electric Appliance Company, 809 Mission St., San Francisco.

REINFORCING STEEL
Edward L. Soule, Rialto Bldg., San Francisco.
Badt-Falk & Co., Call Bldg., San Francisco.
Judson Iron Works, San Francisco and Oakland.
Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
Pacific Coast Steel Co., Rialto Bldg., San Francisco.
Truscon Steel Co., 709 Mission St., San Francisco.

REFLECTORS
I. P. Frink, Inc., 77 O'Farrell St., San Francisco.

REFRIGERATORS
McCray Refrigerator Company San Francisco office, 765 Mission St.

ROOFING AND ROOFING MATERIALS
"Malthoid" and 'Ruberoid," also 'Pabco" ten and twenty year roofs, manufactured by the Paraffine Companies, Inc., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.
H. H. Robertson Co., Hobart Bldg., San Francisco.
Jones Brothers Asbestos Supply Co., 512 Second St., San Francisco.
Johns-Manville Inc., of California, 500 Post St., San Francisco.
Western Asbestos Magneaia Company, 25 South Park, San Francisco.

RUBBER TILING—INTERLOCKING
New York Belting & Packing Co., 518-19 Mission St., San Francisco.

RUGS & CARPETS
W. & J. Sloane, 216 Sutter St., San Francisco.

SAFETY TREADS
Pacific Materials Co., 525 Market St., San Francisco.

SAND
Coast Rock & Gravel Co., Call Bldg., San Francisco.
Del Monte White Sand, Del Monte Properties Co., 401 Crocker Bldg., San Francisco.

SASH AND CABLE CHAINS
Smith & Egge Mfg. Co., Bridgeport, Conn. Coast agents, Rawlins & Smith, San Francisco and Los Angeles.

SAFES AND VAULTS
Hermann Safe Company, 216 Fremont St., San Francisco.

SCALES
Toledo Scale Company, 676 Mission St., San Francisco.

SCENIC PAINTING—DROP CURTAINS, ETC.
The Edwin H. Flagg Scenic Co., 1638 Long Beach Ave., Los Angeles, and 17th and Mission Sts., San Francisco.

SCHOOL AND THEATER EQUIPMENT
H. Rumpf, 567 Howard St., San Francisco.

SHEATHING AND SOUND DEADENING
Samuel Cabot Mfg. Co., Boston, Mass., agencies in San Francisco, Oakland, Los Angeles, Portland, Tacoma and Spokane.
The Paraffine Companies, Inc., 34 First St., San Francisco.

SHEET METAL WORK
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
U. S. Metal Products Co., 330-10th St., San Francisco.

SHINGLE STAINS
Bass-Hueter Paint Company, all principal Coast cities.
Cabot's Creosote Stains, sold by Pacific Bldg., Materials Co., 525 Market St., San Francisco.
Fuller's Pioneer Shingle Stains, made by W. P. Fuller & Co., San Francisco.
The Paraffine Companies, San Francisco, and principal Coast Cities.

ELECTRICAL LAYOUTS AND PLANS
FOR BUILDINGS, INDUSTRIAL PLANTS, ETC.
ROBERT L. ST. JOHN
Phone Douglas 5902 1011 FLAT IRON BUILDING San Francisco, Calif.

BULL DOG FLOOR CLIPS

The use of this clip to anchor wood floors to concrete is cheap insurance against floor buckle and dry rot. Write for samples and special information.

BULL DOG FLOOR CLIP SALES CO.

77 O'Farrell St., San Francisco 600 Metropolitan Bldg., Los Angeles

L. T. KELLEY, General Manager

ARCHITECTS' SPECIFICATION INDEX—Continued

SHUTTERS—ROLLING, FIRE, STEEL, WOOD
J. G. Wilson Corp, 621 North Broadway, Los Angeles.

SIGNALING & PROTECTIVE SYSTEMS
Holtzer-Cabot Electric Co., 125 Armory St., Boston; 408 Claus Spreckels Building, San Francisco.
Garnett, Young & Co., 612 Howard St., San Francisco.

SINKS—COMPOSITION
Petrium Sanitary Sink Co., Fifth and Page Sts., Berkeley.

SKYLIGHTS
H. H. Robertson Co., represented on the Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

STEEL HEATING BOILERS
Birchfield Boiler Company, Tacoma, Washington.
Kewanee Boiler, factory branch, Exposition Building, San Francisco.

STEEL TANKS, PIPE, ETC.
Ocean Shore Iron Works, 55 Eighth St., San Francisco.

STEEL TANKS
Main Iron Works, 1000 Sixteenth Street, San Francisco
S. T. Johnson Co., 1337 Mission St., San Francisco.

STEEL & IRON
Main Iron Works, 1000 Sixteenth Street, San Francisco.

STEEL AND IRON—STRUCTURAL
Central Iron Works, 621 Florida St., San Francisco.
Herrick Iron Works, 18th and Campbell Sts., Oakland.
Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
Judson Mfg. Co., 817-821 Folsom St., San Francisco.
Mortenson Construction Co., 19th and Indiana Sts., San Francisco.
Pacific Rolling Mills, 17th and Mississippi Sts., San Francisco.
Palm Iron & Bridge Works, Sacramento.
Ralston Iron Works, 20th and Indiana streets. San Francisco.
Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.
Western Iron Works, 141 Beale St., San Francisco.

STEEL LUMBER
The General Fireproofing Company, 20 Beale Street, San Francisco

STEEL ROLLING DOORS
Kinnear Rolling Steel Doors, sold by Pacific Building Materials Co., Underwood Bldg., San Francisco.
Wilson Rolling Steel Doors, the J. G. Wilson Corporation, 621 North Broadway, Los Angeles and Waterhouse Wilcox Co., 523 Market St., San Francisco.

STEEL SASH
Bayley-Springfield solid steel sash, sold by Pacific Materials Co., 525 Market St., San Francisco.
"Fenestra" Solid Steel Sash, manufactured by Detroit Steel Products Co., factory sales office, 251 Kearny St., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
U. S. Metal Products Company, 330 Tenth St., San Francisco.
Truscon Steel Company, 709 Mission St., San Francisco.
Allison Steel Sash—John R. Steffens-Lomax Company, 951-53 Monadnock Bldg., San Francisco.

STEEL TANKS
Main Iron Works, 1000 Sixteenth Street, San Francisco.

STEP AND WALK BRICK
California Brick Company, 604 Mission St., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.

STONE
Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana.

STREET LIGHTING EQUIPMENT
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

STUCCO AND STUCCO BASE
John R. Steffens-Lomax Co., 951 Monadnock Bldg., San Francisco.

STUCCO, COMPOSITION
California Stucco Co., Hobrook Building, San Francisco.
Hoff Magnesite Co., San Francisco. Miller & Alf, 337 Monadnock Bldg., San Francisco, general agents.

STUDDING—FIREPROOF STEEL
The General Fireproofing Company, 20 Beale Street, San Francisco

SWITCHES AND SWITCHBOARDS
Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

TELEPHONES—AUTOMATIC
P-A-X System, represented by Direct Line Telephone Company, 37 California Street, San Francisco.

TELEPHONE SYSTEMS
Direct Line Telephone Co., 37 California Street, San Francisco.
"Connecticut" Intercommunicating Telephones, Myers & Schwartz, 71 New Montgomery St., San Francisco.
"Stromberg-Carlson Telephones," Garnett Young & Company, 612 Howard St., San Francisco.

THEATER AND OPERA CHAIRS
C. F. Weber & Co., 365 Market street, San Francisco.
Western States Seating Co., 133 Kearny St., San Francisco.

THERMOSTATS FOR HEAT REGULATION
Johnson Service, Rialto Bldg., San Francisco.

TILES FOR FLOORS, MANTELS, ROOFS
Cannon & Co., Sacramento; and 77 O'Farrell St. San Francisco.
Gladding, McBean & Co., Crocker Bldg., San Francisco.

W. & J. SLOANE

216-228 SUTTER STREET
SAN FRANCISCO
Phone: GARFIELD 2838

LINOLEUMS
WINDOW SHADES
CARPETS
FURNITURE

M. E. RYAN
ELECTRICAL CONTRACTOR
SAN FRANCISCO — 251 TEHAMA ST. — Phone Garfield 3159
REDWOOD CITY — 205 MAIN ST. — Phone Redwood 250 J

ARCHITECTS' SPECIFICATION INDEX—Continued

Livermore Fire Brick Works and California Brick Company, 604 Mission St., San Francisco.
S. &°S. Tile Co., 4th and Carrie Streets, San Jose.

TRANSMISSION MACHINERY
Meese & Gottfried Co., San Francisco, Los Angeles, Portland and Seattle.

TRAVELING CRANES
Cyclops Iron Works, 837 Folsom St., San Francisco.

VALVES—PIPES AND FITTINGS
Crane Radiator Valves, manufactured by Crane Co., Second and Brannan Sts., San Francisco.
Grinnell Co., 453 Mission St., San Francisco.
O. M. Simmons Co., 115 Mission St., San Francisco.
H. Mueller Mfg. Co., 635 Mission street, San Francisco.
Kennedy Valve Mfg. Co., 23-25 Minna street, San Francisco.

VALVE PACKING
N. H. Cook Belting Co., 317 Howard St., San Francisco.

VARNISHES
Bass-Hueter Paint Company, Mission, near 4th street, San Francisco, and all principal Coast cities.
W. P. Fuller Co., all principal Coast cities.
R. N. Nason & Co., San Francisco, Los Angeles, Portland and Seattle.
Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Murphy's Varnish, Uhl Bros., San Francisco, Seattle, Portland, Oakland, Los Angeles.

VENEERS
White Brothers, 5th and Brannan Streets, San Francisco.

VENEERED PANELS
White Brothers, 5th and Brannan Streets, San Francisco.

VENTILATORS
H. H. Robertson Co., represented on the Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

VITREOUS CHINAWARE
Pacific Sanitary Manufacturing Company, 67 New Montgomery St., San Francisco.
West Coast Porcelain Manufacturers, 424 Oceanic Bldg., San Francisco.

WATERPROOFING (See Damproofing)
Medusa Waterproofing, manufactured by Sandusky Cement Co., Cleveland, Ohio. Carried in stock and sold by leading building supply dealers in California, Oregon and Washingt
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

WALL BEDS—SEATS, ETC. (See Beds)

WALL BOARD
"Amiwud" and "Pabco," manufactured by The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
"Campo-Board," White Brothers, distributors, 5th and Brannan Streets, San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.

WALL PAINT
Nason's Opaque Flat Finish, manufactured by R. N. Nason & Co., San Francisco, Portland and Los Angeles.

WALL PAPER AND DRAPERIES
The Tormey Co., 681 Geary St., San Francisco.
W. & J. Sloane, 216-228 Sutter St., San Francisco.
Uhl Bros., San Francisco.

WARDROBES, SCHOOL
W. L. Evans, 700 Block B., Washington, Indiana
James G. Wilson Corporation, 11 East 36th St., New York and Los Angeles.

WASHING MACHINES—ELECTRIC
Thor Electric Shop, 124 Post St., San Francisco.

WATER SUPPLY SYSTEMS
Kewanee Water Supply System—Simonds Machinery Co., agents, 117 New Montgomery St., San Francisco.

WATERPROOFING
U. S. Elaterite Products Co. of the Pacific, American National Bank Building, San Francisco.

WHEELBARROWS—STEEL
Western Iron Works, Beale and Main Sts., San Francisco.

WHITE ENAMEL
"Gold Seal," manufactured and sold by Bass-Hueter Paint Co. All principal Coast cities.
"Silkenwhite," made by W. P. Fuller & Co., San Francisco.
"Satinette," Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., 34 First St., San Francisco. Los Angeles, Portland and Seattle.
Murphy's Muronic Enamel and Murphy's Enamel Undercoating, Uhl Bros., San Francisco, Seattle, Portland, Oakland, Los Angeles.

WINDOW SHADES
W. & J. Sloane, 216 Sutter street, San Francisco.
D. N. & E. Walter, 562 Mission street, San Francisco.

WINDOW SASH CHAIN
The Smith & Egge Mfg. Co., Bridgeport, Conn. Coast agents, Rawlins & Smith, 604 Mission St., San Francisco, and 618 American Bank Building, 2nd and Spring Sts., Los Angeles.

WINDOWS, REVERSIBLE, CASEMENT, ETC.
Hauser Window Co., 1362 Harrison St., San Francisco.
J. G. Wilson Corporation, 621 N. Broadway, Los Angeles; Waterhouse-Wilcox Co., Underwood Bldg., San Francisco.
Critall Casement Window Company, Detroit; Waterhouse-Wilcox Company, agents, 523 Market St., San Francisco.

WIRE, ELECTRICAL
Garnett Young & Company, 612 Howard St. San Francisco.
Electric Appliance Company, 809 Mission St., San Francisco.
"Lowell" Rubber Covered Wire sold by Myers & Schwartz, 90 New Montgomery St., San Francisco.

WIRE FENCE
Standard Fence Co., 245 Market street, San Francisco; and 310 12th street, Oakland.

GLOBE AUTOMATIC SPRINKLERS
Will protect your building and business from destruction by fire and reduce your Insurance Rate. Write for estimates.
Pacific Fire Extinguisher Company
FIRE PROTECTION ENGINEERS
424-440 Howard Street, San Francisco — Manufacturing Plant, 298 Fremont St.

AMERICA IS STILL SHORT OVER ONE MILLION HOMES
— *Literary Digest*

Put your flooring problems up to our experts. We will gladly serve you.

See our catalog in Sweet's, page 481.

For Dining and Dancing

The main room in modern club and community houses is frequently used for dining and dancing, often the two combined, as well as the formal and informal social functions of the year.

OAK FLOORING has both the charm and practical qualities required for all purposes for which such a room is used. Its beauty and richness lend dignity to club receptions and social events; it imparts an atmosphere of good cheer to lunches and dinners; while its bright polished surface, reflecting the movement of gliding feet, adds to the pleasure of the dance.

Oak flooring retains its natural beauty indefinitely, while the fact that an oak floor is easily cleaned and kept in perfect condition reduces cost of club maintenance.

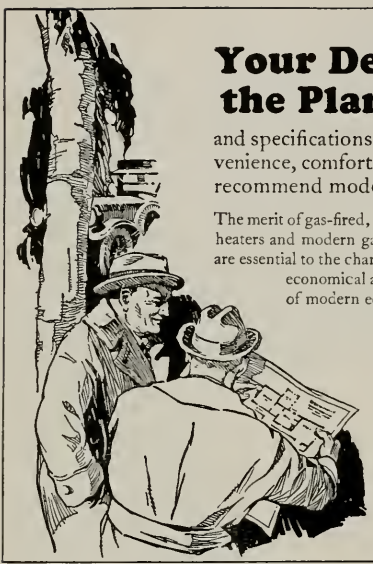
Literature of value to architects on the uses and advantages of oak floors will be sent on request.

OAK FLOORING BUREAU
1036 Ashland Block, Chicago

OAK FLOORS

NATURE'S GIFT OF EVERLASTING BEAUTY

Oak floors in the Community Recreation Clubhouse of Evanston, Ill. and in the music room of the Women's Club, Magnolia, Mass., enhance the beauty of the main rooms.



Your Development of the Plans—

and specifications contemplates every item of convenience, comfort and service,—and naturally you recommend modern units of equipment.

The merit of gas-fired, house heating systems, automatic gas water heaters and modern gas ranges is recognized. These appliances are essential to the character of a modern home and afford quick, economical and reliable service so necessarily expected of modern equipment.

Interesting data and facts have been collected by our gas sales engineers which they will be glad to submit to you. Let us tell you about the remote or automatic control used with gas-fired steam, hot water or warm air heating systems.

PACIFIC GAS AND ELECTRIC COMPANY
A California company serving over 318,000 gas consumers.

P·G·and E·
"PACIFIC SERVICE"

ARMSTRONG'S

LINOTILE
CORK TILE
LINOLEUM

Furnished and Installed by

VAN FLEET FREEAR COMPANY

420 South Spring St.
Los Angeles

557 Howard Street
San Francisco

FEDERAL LAND BANK, BERKELEY
J. W. Plachek, Architect

Incomparable!

BECAUSE of the special service rendered by Western Venetian Blinds in the scientific distribution of daylight and in the regulation of ventilation they are incomparable.

Largely through the influence of prominent architects, over 2500 leading banks of America are now equipped with this modern window equipment.

WESTERN BLIND & SCREEN CO.

General Offices: Los Angeles, Calif.
Factories: Los Angeles and Kansas City
San Francisco, Cal.: 921 Hearst Bldg.
Portland, Ore.: 213 Fitzpatrick Bldg.

Western Venetian Blinds

MORE LIGHT~MORE AIR~LESS GLARE

E. B. Noble, President
A. E. Wilkins, Vice-Pres.

Beam, Angle, Channels, and Universal Mill Plates for immediate shipment from stock

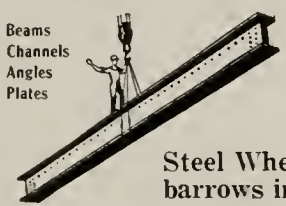
Pacific Rolling Mill Co.

SUPPLIERS OF

FABRICATED STRUCTURAL STEEL, Forgings
Bolts, Rivets, Frogs, Switches, Cast Iron Castings

General Office and Works
17th and MISSISSIPPI STS., SAN FRANCISCO
Telephone Market 215

W. B. MORRIS, Pres. H. H. MORRIS, V.-P. L. J. GATES, Sec.

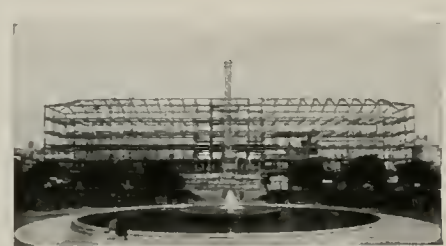


Steel Wheelbarrows in Stock

Western Iron Works

STRUCTURAL IRON AND STEEL CONTRACTORS

141-147 Beale St. and 132-148 Main St. SAN FRANCISCO
Phones: GARFIELD 2575—2576



Bliss & Faville, Architects

Steel Frame, California State Building, Civic Center, San Francisco.

FABRICATED BY

THE PALM IRON AND BRIDGE WORKS (Incorporated)

15th and R Streets, Sacramento

WESTERN ASBESTOS MAGNESIA CO.

INSULATING ENGINEERS AND CONTRACTORS

CELOTEX
INSULATING LUMBER

PLASTER BASE
INSULATOR
SOUND DEADENER
ACOUSTIC CORRECTOR

Asbestos and Asphalt Slate Shingles and Roofings
Asbestos and Composition Roofings—Roof Coatings
Magnesia and Asbestos Pipe and Boiler Coverings
Cold Storage Insulation—Sectional Expansion Paving Joint
"Linofelt" Sound Deadener—Wall Board
Cork Pipe Covering, Board and Granulated Cork

21-29 South Park
Bet. 2nd and 3rd Sts.
San Francisco, Cal.
Telephone Douglas 3860

First National Bank & Central Wisconsin Trust Co. building, Madison, Wis.

JAS. R. & E. J. LAW
Architects

When Planning Your New Building Consider This Form of Construction

The new First National Bank and Central Wisconsin Trust Co. building is another indication of the prevailing preference for *varied effects in Indiana Limestone walls.* Gray Indiana Limestone was used for the base of the building, and moulded sill course. Buff stone for the first story and Variegated stone for the remainder of the building, with the exception of the window panels which are carried out in the Gray stone.

Architects and owners have come to realize that variation of grades used in stone walls will produce a far more artistic effect in the finished building than monotonous walls of uniform tone and texture.

Our new booklet on bank building is acknowledged to be an unusually fine compilation of material on this subject and will be sent free upon request.

INDIANA LIMESTONE
The NATION'S BUILDING STONE

Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana

Service Bureau in New York and Chicago

Steam Heating and Ventilating

For Commercial and Public Buildings

Furnace Heating for the Home

Mangrum & Otter, Inc.

827-831 Mission Street San Francisco, Cal.

Phone Kearny 3155

FOR PERFECT ILLUMINATION

Specify **Solar Lighting Fixtures**

The most efficient commercial lighting unit on the market for diffusion and quality of light. A wide range of types from plain commercial to ornamental strap iron designs are carried in stock.

Write for Booklet Showing Complete Line

D. DIERSSEN COMPANY

20 Second Street San Francisco

SASH CHAIN

Made of

"Giant Metal," "Red Metal" and Steel

Further information on request See page 1191 Sweet's Catalog

THE SMITH & EGGE MFG. CO.

"Originators of Sash Chain" Bridgeport, Connecticut, U. S. A.

RAWLINS & SMITH, Coast Agents

604 Mission St., San Francisco 618 American Bank Bldg., Los Angeles

Fenestra

SOLID STEEL WINDOWS

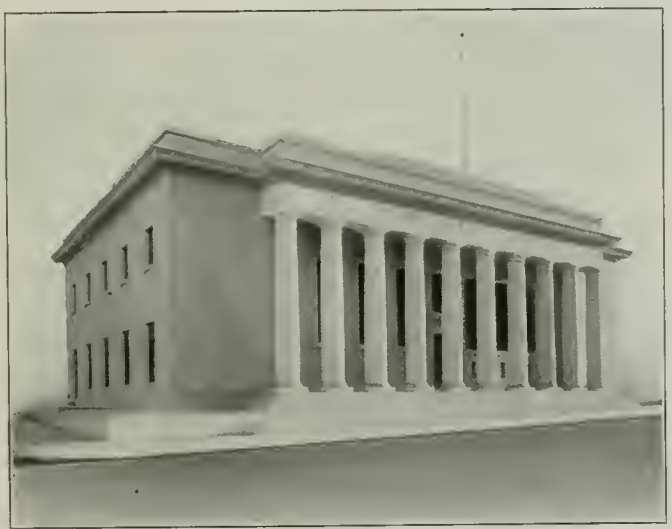
DETROIT STEEL PRODUCTS CO., Detroit

251 Kearny Street, San Francisco Phone Sutter 1250

Pacific Coast Branch Factory at Emeryville

GRANITE

"....that Government of the people, by the people, for the people, shall not perish from the earth."



TREASURY DEPARTMENT

THE United States government is founded on policies of permanence.

It was the thought of the founders of the United States, and by the statesmen who have perpetuated the ideas and ideals of the founders, that this government shall exist for all time, a vital, living example to the rest of the world of the principles of equality and justice for ALL men.

It is only natural that government buildings should exemplify these principles; that they should be built for **permanent** use; that they should be designed to impress all who see them with the solidity of the United States.

It was only natural that RAYMOND GRANITE should have been selected for the United States Treasury at San Francisco. For only from RAYMOND GRANITE could have been constructed an edifice so obviously permanent, solid and lasting in appearance.

RAYMOND GRANITE COMPANY
INCORPORATED
GRANITE ~ STONE CONTRACTORS BUILDING ~ MEMORIAL
3 POTRERO AVE SAN FRANCISCO 1350 PALMETTO STREET LOS ANGELES

Wilson Horizontal folding door arranged to fold on the interior

Light on the Subject *of* Horizontal Folding Doors

THERE are openings where every bit of daylight is important, where architectural refinement is important. For all such there is the Wilson Horizontal Folding Door. Having but one fold across the middle, it can be made practically all glass, usually, though, glass in the top panels is sufficient. And, of course, they can be made to harmonize with any architectural treatment you have in mind. Open, these doors fold flat against the ceiling and completely out of the way. Or they can be arranged to project outside of the building to form a canopy. Our catalogue tells the whole story. Send for it now.

The J. G. Wilson Corporation
621 N. Broadway, Los Angeles
1 East 36th Street, New York
Offices in Principal Cities

Established 1876
Wilson
DOORS-PARTITIONS-BLINDS
WARDROBES
THE J.G.WILSON CORPORATION
NEW YORK CITY

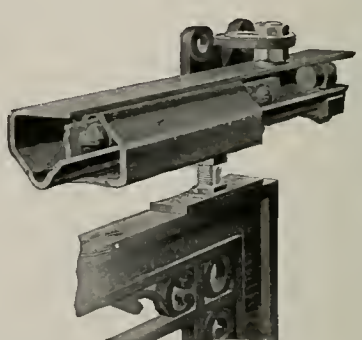
for Service, specify—

McCABE No. 5 Elevator Door Hanger

Simple

Strong

Silent



WRITE FOR OUR "BLUE BOOK"

THE McCABE HANGER MFG. COMPANY

W. H. Steel, Agt.
LOS ANGELES, CAL.

425 W. 25th St.
NEW YORK CITY

Rear Elevation and Light Court

Patterson Building, Fresno, Calif.

R. F. Felchin Co. Architects and Builders

More Light

is obtained for offices on the rear and alley elevations and in the light courts of this building because they have installed

METPRODCO

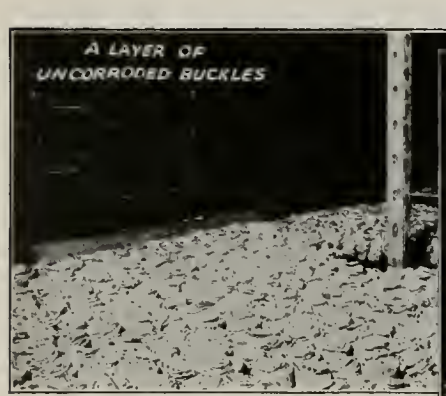
Type "G" Double Hung STEEL SASH

FURNISHED WITH UNDERWRITERS' LABEL
MADE FROM "KEYSTONE" COPPER STEEL

UNITED STATES METAL PRODUCTS CO.

330 Tenth St., San Francisco, Calif.
Lumber Exchange, Seattle, Wash.
Exchange Bldg., Portland, Ore.
Bank of Italy Bldg., Los Angeles, Calif.
Paulsen Bldg., Spokane, Wash.
Provident Bldg., Tacoma, Wash.

No. 3 of a Series on the Manufacture of Paint and Varnish



The Corrosion of Pioneer White Lead

The old Dutch process of lead corrosion, developed 400 years ago in the Netherlands, has never been improved upon, nor equaled, as a method of producing the purest and most opaque "white" lead.

In this process, pure metallic lead, cast into "buckles," is placed in specially shaped earthenware pots designed to hold weak acetic acid in the bottom out of contact with the lead. Alternate layers of these pots of buckles, acid and fermenting tan bark are stacked in large bins and kept at a temperature of about 170° F. for 100 days, by the fermenting tan bark. During this interval the metallic lead is first changed to lead acetate and then to chemically pure basic lead carbonate.

Pioneer White Lead, corroded in our own plant by the old Dutch process, insures Fuller Quality.

Lead buckle before and after corrosion by the old Dutch process.

Consult our service department, for specifications and samples showing standard or special finishes, or to help solve individual problems of surface protection and decoration. This service does not obligate you.

Write to Dept. A-1 for an interesting and informative booklet on the manufacture of white lead

W · P · FULLER & CO.
301 Mission Street, San Francisco
21 Branches in Pacific Coast Cities - Factories: San Francisco and Los Angeles

FULLER
PAINTS Since '49 **VARNISHES**

BOWSER

Experience with Pacific Coast conditions, coupled with diversified experience on every sort and size of installation, whether for handling gasoline and oil or effecting economic lubrication—

Experience that will help you better serve the owner—

Experience that can be had only upon application to this house, which opened its first Pacific Coast branches in 1908.

Tell us your problem, and we will go to work —without obligation, of course.

TANKS **DEPENDABLE** PUMPS

BOWSER ESTABLISHED 1885

Sales and Service Offices and Representatives Everywhere
612 Howard St., San Francisco

Pump and Tank Headquarters
Fort Wayne, Indiana
722-3 New Bank of Italy Building, Los Angeles

Why Take a Chance? An Investment With Protection is Better Than a Risk

YOU are taking a big chance if your building has unprotected window openings. It is not only constantly threatened by the buildings adjoining, but a fire within is quite likely to burst out of one window and re-enter through another. Recent fires have demonstrated this danger.

Kinnear Steel Rolling Shutters are not an experiment; they have been through the fire test and have made a wonderful record. Why take a chance when you can turn a risk into an investment?

Our illustrated book, "Exposure Hazard and Window Protection," tells about the protection and the investment. A copy will be sent upon request.

KINNEAR ROLLING · DOORS

THE KINNEAR MANUFACTURING COMPANY
661-671 FIELD AVENUE
COLUMBUS, OHIO

Dawn to Dusk

service—not the spectacular performance of a dauntless Maughan, but the day-in, day-out service that has, on occasion, and can again, accomplish the seemingly unaccomplishable during a sun-dial circuit.

GUNN, CARLE & CO.

Reinforcing Steel

FABRICATION-INSTALLATION

444 Market Street
Sutter 2720

DEPENDABLE — Read what Architects Miller & Warnecke think of the WESIX ELECTRIC HEATER —

Inquiries Answered Promptly

Mr. Wesley W. Hicks, Mfg. Wesix Heaters, San Francisco, Calif.

Oakland, Calif., July 18th, 1923.

In regard to Wesix Electric Heaters installed in the Hotel Taylor, Paso Robles, we are pleased to state that these heaters are giving excellent satisfaction, and we have found them to be dependable wherever installed.

We are specifying these heaters in residence work, as well as for apartment houses and hotels, and do not hesitate to recommend them.

Very truly yours, MILLER & WARNECKE,
By Chester H. Miller.

W. WESLEY HICKS, MANUFACTURER, RIALTO BLDG., SAN FRANCISCO

BUILDING FOR WALTON N. MOORE DRY GOODS COMPANY, SAN FRANCISCO
Geo. W. Kelham, *Architect* Foundation Company, *Builders*

FURRING CHANNELS
CORNER BEAD and ARMCO IRON

Herringbone
RIGID METAL LATH

Let us tell you the many advantages of
HERRINGBONE

The General Fireproofing Co.

20 Beale Street, San Francisco

PITCHER DOOR HANGERS

Give Service Satisfaction

Are Dependable Durable and Economical

No extra thickness of wall required. Installed in 5½ inch partitions. Specify sliding doors in place of swinging doors.

MANUFACTURED BY

National Mill and Lumber Company

Kearny 3580 — 318 Market Street SAN FRANCISCO

GOODS OF QUALITY HM&S

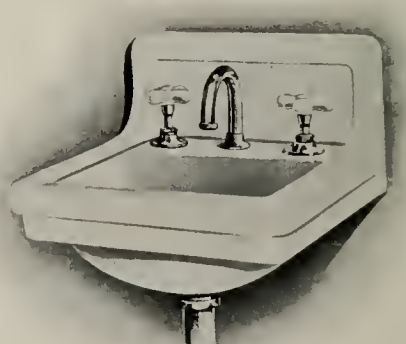
This TRADE MARK means much to the conscientious Architect and Builder

It means a satisfied client

High-Grade Plumbing Fixtures

Holbrook, Merrill & Stetson

64 SUTTER STREET
SAN FRANCISCO



"Save the surface and you save all" Paint & Varnish

-the Varnish you specify

for the floors in your client's home will be subjected to the most severe tests.

It must stand scuffing from the kiddies' shoes when they play indoors.

It must stand the shuffling of feet when the rugs are turned back so that the latest fox trot can be tried.

It must resist the action of water.

The failure to perform any of these duties means stained and discolored floors that have to be refinished at considerable cost and annoyance.

Specify Hueter's Floor Varnish for all coats on the finishing of floors and you will protect your clients with a varnish that *stands every test.*

Bass-Hueter Paint Co.

SAN FRANCISCO

Los Angeles Fresno Oakland
Portland Tacoma Seattle

Specify **HANDY FLUSH VALVES**

It is NON-CLOGGING

It functions perfectly with any make or kind of bowl.
Gives perfect cleansing flush — washes bowl clean.

Model A—Indirect Flush: For residences served by one-half inch supply pipe.

Model B—Direct Flush: For hotels, office and other buildings served with three-quarter inch or larger supply pipe.

Write for complete catalogue.

HANDY SELF-CLEANING FLUSH VALVE CO.
731 Folsom Street, San Francisco, Cal.
Demonstration in Universal Exhibits,
Monadnock Building, San Francisco

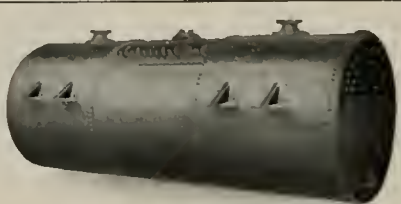
ALL CAST IRON—3 Sizes (3, 5, and 7 Sections)

RA-DO FUMELESS GAS **RADIATORS**

The Ideal "Year-Round" Heating System
For The Home—New or Old

Easiest and Cheapest to Install
Lowest Operating Cost

POTTER RADIATOR CORPORATION
5954 Pasadena Ave., LOS ANGELES
393 Sutter St., SAN FRANCISCO
1700 San Pablo Ave., OAKLAND



POWER AND HEATING
BOILERS

STEEL TANKS, STACKS, BREECHINGS, SHEET AND PLATE WORK
MACHINERY AND IRON CASTINGS

MAIN IRON WORKS

Main Office and Works: 7th, DAGGETT AND 16th STS. San Francisco, Calif.
Telephone Market 752-753

The Scientific American says:

"The Paint That Won't Come Off"

For Waterproofing Basements — Walls

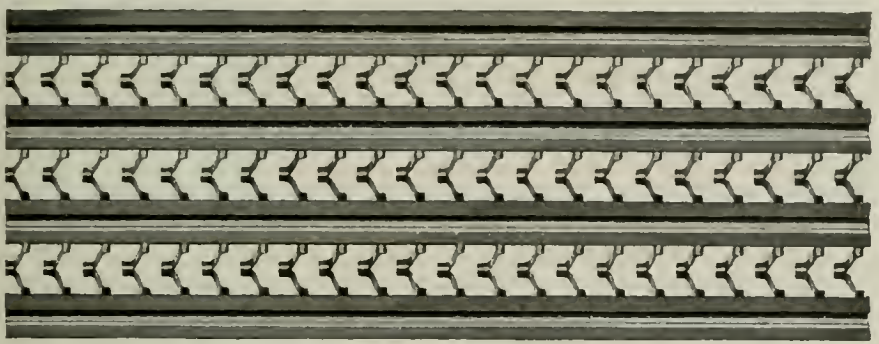
FOR ROOFS — TANKS — STACKS
CORNICE—PIPE—BRIDGES—PILING

Specified for New
Stockton Roundhouse, Western Pacific Ry. Co.

Contains No Tar } No Asphaltum

U. S. Elaterite Products Co. of the Pacific
AMERICAN NATIONAL BANK BUILDING
Telephone Sutter 4810 San Francisco

When writing to Advertisers please mention this magazine.



Truscon 1-A Lath Used in Homes as Economically as Wood Lath

THE use of Truscon 1-A Lath with ½" grounds solves the problem of firesafe, economical plaster in homes.

Every home owner desires a house that is firesafe, crack proof, sound proof and vermin proof.

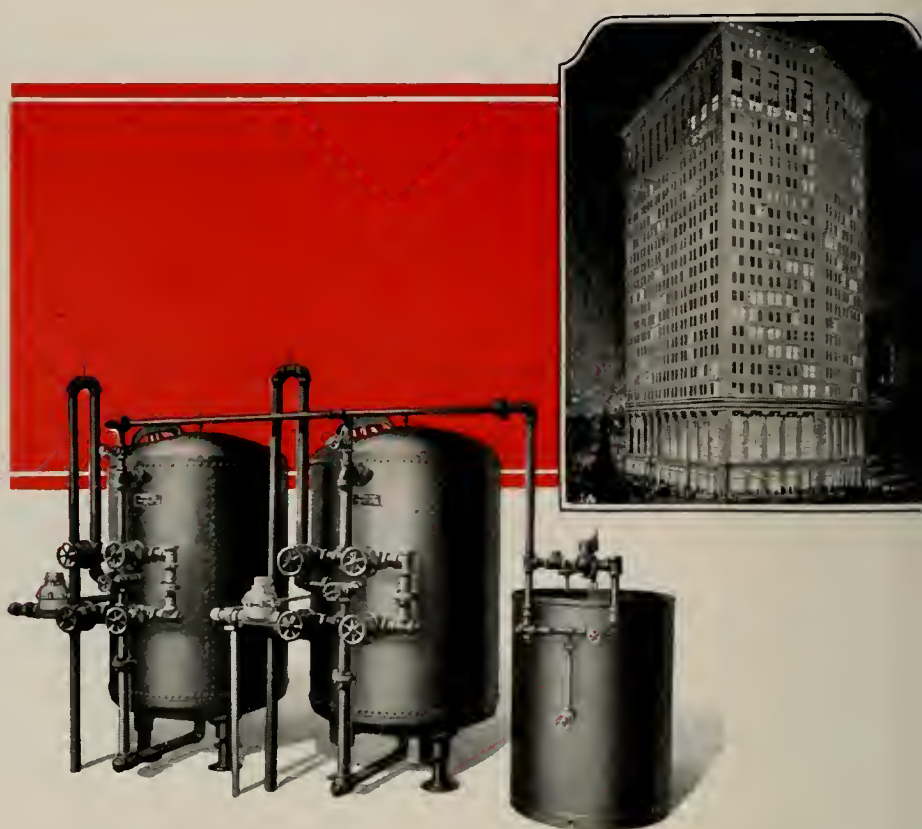
The use of Truscon 1-A Lath gives a firesafe reinforced plaster construction at a very low cost — little if any more than wood lath!

Where plaster on wood lath is specified the contractor can give an alternate bid on the plaster on Metal Lath at a very little increase in price. This bid is practically certain to get him the job.

Clients will be better satisfied in the realization that they are getting the best in building construction. Moreover, the architect thus not only serves his clients, but renders inestimable service to the country by assisting in the reduction of our enormous annual fire loss.

TRUSCON STEEL COMPANY

CHAS. HALLOWAY, *Branch Manager*
709 MISSION STREET SAN FRANCISCO, CALIF.
TELEPHONE DOUGLAS 7135



Wayne Water Softeners deliver 100% soft water, in unlimited quantities, at a more rapid rate and at a lower cost. They are easy to install and cost little to operate. No chemicals are used. Recommend Wayne Water Softeners for both home and industrial use, first because of the numerous advantages and economies of water 100% soft, and, second because of the many widely recognized superiorities of this equipment.

Way

Symbol of Satisfaction

Wayne Water Softeners Have Won First Place for Both Home and Industrial Use Because of Their Newer and Better Principle

The first benefit of a Wayne Water Softener, whether used in an institution, an office building, an industrial plant, or the home, is the remarkable economy which it insures.

Hotels, hospitals, and other public or semi-public institutions report that the 100 per cent soft water provided by a Wayne Softener, makes a notable saving in the laundry. Less labor, less soap and other washing materials, are required, and the clothes are cleaner, whiter, softer, and wear far longer.

Industrial plants in various fields find special uses for the Wayne Softener. One of its most general benefits to industry, however, is the elimination of boiler scale,—with its attendant waste of coal, danger from boiler explosion, etc.

All buildings using extensive plumbing in which hard water leaves heavy lime deposits, can and should use Wayne 100 per cent soft water. It eliminates need of renewing the plumbing,—which, in many territories, may be required as often as every five years.

The Wayne Softener has so many practical advantages, that it is winning pronounced preference everywhere. Let us send you full details. Write today.

Wayne Tank & Pump Co., 862 Canal St., Fort Wayne, Ind.

Wayne Tank & Pump Co. of Canada, (Limited), Toronto, Ontario, Canada
Wayne Tank and Pump Company, 9 Kingsway, London, W. C. 2, England

Division Offices in: Atlanta, Birmingham, Boston, Chicago, Cincinnati, Cleveland, Columbus, Dallas, Dayton, Des Moines, Detroit, Indianapolis, Jacksonville, Kansas City, Milwaukee, Minneapolis, New York, Omaha, Peoria, Philadelphia, Pittsburgh, San Francisco, St. Louis and South Bend

Warehouses in: Philadelphia and San Francisco

An International Organization With Sales and Service Offices Everywhere

U.S. TRADE MARK

Wayne equipment is manufactured completely in one plant and every phase of its operation is backed and guaranteed by the largest institution in the world producing water softeners, with 30 years' experience and a sales and service organization international in scope.

"When Winter Comes"

The Owner of This Home Will Press a Button When He Desires Heat From His

ELECTRICALLY CONTROLLED-GAS FIRED

McLAUGHLIN FURNACE

WHEN HEAT *is produced by the burning of gas in the "double radiator" combustion chamber, constructed of Welded Armco Iron, operating costs are reduced to the point where McLaughlin Heating Systems are rapidly replacing wood and coal furnaces.*

The *installation of McLaughlin Warm Air Heating Systems is supervised by McLaughlin agents, which assures satisfaction to those who depend upon them for comfort with convenience.*

Information *concerning the installation, operation, or construction of McLaughlin Heating Systems may be obtained upon request from the following addresses:*

SAN FRANCISCO
W. P. Goss, Geary Street

CHICO, CAL.
Hall Sheet Metal Works

McLAUGHLIN METAL WORKS
223 J ST., SACRAMENTO, CALIF.

STOCKTON
Willard Hardware Co.

FRESNO
Evans Heating Co.

Old Mission Portland Cement Company

Each shipment of "OLD MISSION" Portland Cement is guaranteed not only to equal but to surpass all requirements of the standard specifications for Portland Cement as adopted by the U. S. Government and by the American Society for Testing Materials. A Guarantee Certificate is mailed with the bill of lading of each car, giving number of car, date packed, and number of barrels, over the signature of the chief chemist.

8000 SACKS DAILY

SALES OFFICE:

MILLS BLDG., SAN FRANCISCO

PHONE SUTTER 3075

PLANT:

SAN JUAN, CAL.

ELEVATORS

FREIGHT & PASSENGER

FOR EVERY MODERN
BUILDING SERVICE

UNION CONSTRUCTION COMPANY

Main Office:
BALFOUR BLDG.
San Francisco

Works:
FOOT OF 14TH ST.
Key Route Basin, Oakland

PALACE HARDWARE CO.

Good Buildings Deserve Good Hardware

CORBIN

581
MARKET ST.

6063
SUTTER

"San Francisco's Leading Hardware Store"

George S. MacGruer
Robert M. Simpson
} Members of Builders Exchange

MacGruer & Simpson

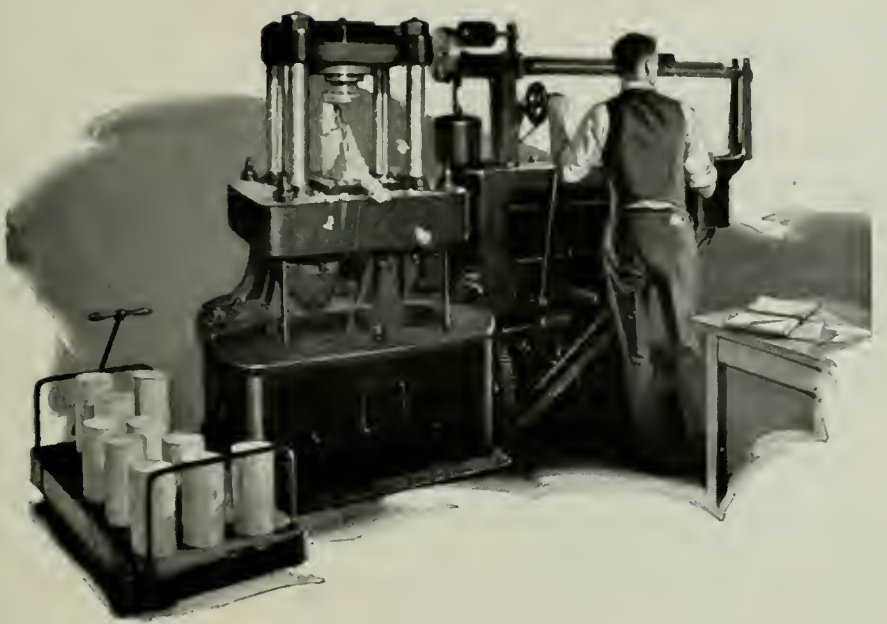
CONTRACTING PLASTERERS

PLAIN AND ORNAMENTAL

Cement, Stucco and Artificial Stone

Phone Garfield 512

266 Tehama Street, San Francisco



Stories Read from Solid Concrete

From characters graven on tablets picked up in dusty Egyptian and Babylonian ruins scientists read the stories of ancient civilizations.

Every day in a Chicago laboratory other scientists translate from concrete cylinders stories of infinitely greater importance to men and women of today.

A research engineer sets a 6-inch cylinder of concrete on a heavy press. Hidden machinery starts. The huge apparatus commences to register pressure—100,000 pounds, 150,000 pounds, perhaps 200,000. The cylinder tractures with a report like a one-pound gun. The engineer jots down some figures, clears the press and prepares to test another cylinder.

Four such testing machines are only a small part of the equipment of the Structural Materials Research Laboratory, which has been maintained by the Portland Cement Association in cooperation with the Lewis Institute, Chicago, since 1916.

Patiently and with scientific exactness the engineers carry on their constant research. Perhaps five years have elapsed since these cylinders of concrete were made at the laboratory. Thousands of them are kept on hand, aging under carefully controlled conditions. Testing them to destruction helps to prove one of the score of things which the laboratory is studying—the relative strength of concrete when made with various proportions of water; with aggregates of various size and grading; when mixed for various lengths of time.

Over 240,000 experiments and 150,000 test pieces have been made in this laboratory during the past five years.

Those who build great structures, roads, and homes, are daily profiting from the economies which this laboratory's research work has made possible, for everything it learns is made available to everyone who wants the information, without charge.

By saving money for you and other cement users—by helping you to get better concrete—the cement industry through its laboratory aims to serve.

PORTLAND CEMENT ASSOCIATION

A National Organization
to Improve and Extend the Uses of Concrete

Atlanta	Des Moines	Los Angeles	New York	Salt Lake City
Birmingham	Detroit	Memphis	Parkersburg	San Francisco
Boston	Helena	Milwaukee	Philadelphia	Seattle
Chicago	Indianapolis	Minneapolis	Pittsburgh	St. Louis
Dallas	Jacksonville	New Orleans	Portland, Oreg.	Vancouver, B. C.
Denver	Kansas City		Raleigh, N. C.	Washington, D.C.

Dancing on Acorn floors

YOU'RE never at a loss for entertainment when you own hardwood floors. When you wish to entertain just a few friends, all you have to do is roll back the rugs and start the phonograph.

There's a quality hardwood that delights lovers of fine floors. It's ACORN brand American-grown oak flooring, distinguished from ordinary hardwood by the ACORN trademark stamped on each bundle. Careful grading and milling have made ACORN flooring uniform in coloring and grain. Yet these beautiful floors cost no more than other hardwood, and but little more than pine.

Your Architect or Contractor can get ACORN FLOORING for your home

STRABLE HARDWOOD COMPANY

DISTRIBUTORS

STRABLEWOOD QUALITY HARDWOODS

537 First Street Oakland, California

A Floor of Dignity and Charm

in a setting that demands distinctive treatment

A wide expanse of salon floor, necessarily unrelieved by furniture, requires treatment that will associate it with the elaborate decoration of walls and ceiling. Craftsmen of the old world knew how to break any possible monotony by geometric patterns, and in our day

Bruce Design Oak Flooring

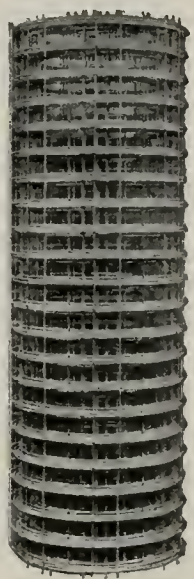
because of its accurate manufacture in quantity production presents to architects an opportunity to rival the beautiful historic floors of the past. Herringbone design, affording a wealth of color, and of varying light and shade, is especially welcomed by lovers of the beautiful.

In homes, too, wherever a note of distinction is sought, Bruce oak floors, in any of the patterns described in our booklet "Design Oak Floors," meet the most exacting taste. Send for this booklet, which contains much information of practical value to the architect, such as sizes of squares, number and length of the pieces, and proper widths of strips.

The American Architect Specification Manual contains our standard specifications. See our catalog in Sweet's

E. L. BRUCE COMPANY
Manufacturers
Memphis, Tenn.

MEMPHIS
BRUCE
LITTLE ROCK



Clinton

Electrically welded Wire Fabric

The Ideal Mesh Reinforcement for Concrete

Immediate Shipment from Stock
San Francisco
Los Angeles
Seattle

Wickwire Spencer Steel Corporation

SAN FRANCISCO
144 Townsend St.
Douglas 1421

LOS ANGELES
316 E. Market St.
Pico 4851

Lindgren Company

announces the retirement from active interest in the Corporation of its valued secretary, Mr. H. C. Park, who has been associated with the Company since its inception. The officers of the Corporation announce the change of its name to

LINDGREN & SWINERTON, INC.

On and after August 1, 1923, the home office of the Company will be in the

New Standard Oil Building
225 Bush Street
On the Sixth Floor

Specify

"Merced" Roofing Tile

BURNED clay roofing tile is now being used for almost every type of architecture, educational and business institutions, churches, homes, industrial plants.

Besides being fireproof, a properly laid tile roof is free from leaks and will not call for repairs.

CALIFORNIA POTTERY CO.

579-583 MILLS BLDG.
SAN FRANCISCO, CALIF.
Merced Oakland Fresno

We also manufacture the following products:

Sewer Pipe and Fittings — Chimney Pipe and Fittings — Flue Lining — HollowBuilding Tile—Partition Tile—Drain Tile

SPECIFY

BIRCHFIELD
REG US PAT. OFF.

STEEL HEATING BOILER

Birchfield Boiler Co.
Manufacturers
Tacoma, Wash.

Representatives: Larimer & Lauer, Los Angeles; Walter S. Leland, 208 Balboa Bldg., San Francisco; Thermal Engineering Co., Salt Lake City; Power Equipment Co., Portland, Or.; Walter B. Starky, Spokane, Wash.; Seattle (Wash.) Office: 816 American Bank Building; Sullivan Valve & Engineering Co., Butte, Mont.; Exclusive Manufacturer and Selling Agents: Vulcan Iron Works, Ltd., Vancouver, B. C.; Missouri Boiler Works Co., Kansas City, Kansas.

Cleveland Trust Branch Bank
A. G. Hall, Architect
Matched panels of Madre Veined Alabama on Imported Verde Antique Base

Another View of Bank shown opposite
Marble contractors: Interior Marble & Stone Co.—Andres Stone & Marble Co.

Madre Veined Alabama Matched Panels

WITH no other domestic marble is it possible to even simulate the distinctiveness of the matched panels of Madre Veined Alabama.

Whenever white marble is to be part of the color scheme the symmetrical markings of its black veins add a charm which none but a few of the imported marbles equal.

We are the sole wholesale distributors of Madre Veined Alabama, as well as of a hundred other widely used marbles. Our accumulated knowledge of the world's marbles is at your service.

We would be glad to hear from you at any time.

TOMPKINS-KIEL MARBLE COMPANY

505 FIFTH AVENUE
NEW YORK CITY

DISTRIBUTORS MARBLE-STONE

CHICAGO
PHILADELPHIA
SAN FRANCISCO

A. F. Edwards, Pres.
J. M. Fabbris, Vice-Pres.
J. A. Mackenzie, Secy.

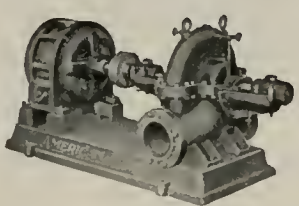
Office Telephone Market 5070

Chas. F. Eisele, Asst. Mgr.
J. Rubiolo, Asst. Mgr.
D. A. Batsford, Asst. Mgr.

AMERICAN MARBLE & MOSAIC CO.

25-59 Columbia Square, San Francisco, Calif.
Near Folsom St., Bet. 6th and 7th Sts.
Factory on Water Front, South San Francisco. Phone South San Francisco 161

PUMPING MACHINERY



"AMERICAN-MARSH"
House, Sump *and*
Fire Pumps

FOR ALL SPECIFICATIONS

SIMONDS MACHINERY CO., 117-121 New Montgomery Street
PHONE KEARNY 1457 SAN FRANCISCO

DISTRIBUTORS
Murphy Varnish Co. —— U. S. Gutta Percha (BARRELED SUNLIGHT)

UHL BROS.

WALL PAPER PAINTS

SAN FRANCISCO LOS ANGELES OAKLAND PORTLAND SEATTLE

Pack your Radiator Valves with
Palmetto Twist Packing
It can be unstranded to fit any
size Valve. It does not get hard

H. N. COOK BELTING CO.
401-433 Howard St., San Francisco, Cal.

SPERRY FLOUR COMPANY'S MILL AT SPOKANE, WASHINGTON
Sheet Metal Contractors, Brandt Bros.

ARMCO INGOT IRON

Three carloads of black and galvanized Armco-Ingot Iron were used in the bins and pipes of this modern flour mill. For many years to come this rust-resisting iron will avoid any costly replacement, the item that eats into profits.

Armco-Ingot Iron is used for roofing, siding, heating and ventilating pipes and ducts, gutters, leaders, down spouts, cornices, tanks, tubes, fence wire, lath and many other purposes where corrosion must be checked.

Where to Order: San Francisco Warehouse, Tenth and Bryant Streets; California Cornice Works, Los Angeles; A. M. Castle Co. of Washington, Seattle; Spokane Sheet Metal Supply Co., Spokane.

THE AMERICAN ROLLING MILL CO.
MIDDLETOWN, OHIO

When writing to Advertisers please mention this magazine.

Evans Vanishing Door

Wardrobes are the practical and efficient installation for the saving of floor space, lowering the cost of construction and upkeep, and making for the convenience and sanitation of THE MODERN SCHOOL.

WARDROBES, Class F, made for plaster Backs and Ends, no Divisions, and with Evans Process Hollow Sanitary Door, hung on double pivoted arms, without guides, tracks or rollers, swing easily and silently. They cannot stick or bind. Made with or without Blackboards. Hardware can also be purchased separately.

More Than a Million Hang Their Wraps in Evans Vanishing Door Wardrobes

Trade Mark
VANISHING DOOR
U. S. Reg.

Catalog
"PICTURES THAT TALK"
Sent on Request

W. L. EVANS 700 Block B **Washington, Ind.**

Every Room Adds at Least $1,000 to the Cost of a Home or Apartment House

Hotel Cecil, San Francisco
Equipped with Wall Beds

Portal Wall Beds

are real space and cost savers. Those who would build wisely in these days of flunctuating prices, provide for PORTAL WALL BEDS.

MARSHALL & STEARNS CO.
WALL BEDS
"HIGHEST AWARD ALWAYS"

1152 Phelan Building
San Francisco

1774 Broadway
Oakland

MRS. WINIFRED McLAUGHLIN LEET HOUSE, SAN JOSE, CALIFORNIA
Clarence A. Tantau, *Architect*

The irregular laid Medium Cordova Tile in pastel shades of russet brown, purple and old rose lend unusual charm to the roof of this attractive residence.

LATIN TILES

with their many patterns and wide range of color give the Architect an exceptional opportunity to secure beautiful and everlasting roofs.

GLADDING · McBEAN & CO.

FOUNDED · 1875

Crocker Building
San Francisco

Trust & Savings Building
Los Angeles

Works at
Lincoln · California

FESS SYSTEM

The true TURBINE

READ WHAT ONE OF THE LARGEST REALTY FIRMS ON THE PACIFIC COAST THINK OF OUR EQUIPMENT AND REAL "honest-to-goodness" SERVICE

"We do not hesitate to say that our experience with the Fess Rotary Burner is the most satisfactory in every way. We have had quite a number of the [redacted] Burners in operation and have been satisfactory, although the repairs have been more, due possibly to the fact that they have had several different representatives here in our city and the service behind them has not been as good as that behind the Fess Burner, which have had the same agency for a period of ten or twelve years and has been eminently satisfactory."

218-220 Natoma Street San Francisco

Phones Sutter 6927-6928

SPECIFY AND INSIST UPON FESS SYSTEM

934 Santee Street Los Angeles

Bdwy 1375

AUTHORIZED AGENCIES AND SERVICE IN ALL PRINCIPAL CITIES

The Coen System

of Mechanical Oil Burning

[Pressure System]

Equipped with complete automatic control was specified for the new Community Hospital for San Mateo County, W. H. Toepke, Architect.

The Coen System was specified because it is the best and most economical oil burning system for use in high-pressure power plants.

Write for complete data.

COEN COMPANY, Inc.

112 MARKET STREET, SAN FRANCISCO
Phone Sutter 2838

Los Angeles, Cal. 428 Story Bldg.

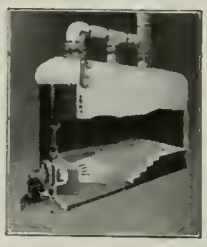
Seattle, Wash. 303 Railroad Ave., South

Portland, Ore. 51 First Street

JOHNSON'S ROTARY CRUDE OIL BURNER

Can be installed in any BOILER or FURNACE

Gives Satisfactory Results
Simple to Operate—Automatic—Safe
Let us tell you more about this Oil Burner.



BURNER IN OPERATION

S. T. JOHNSON CO.

1337 Mission Street
San Francisco
Phone Market 2759

940 Arlington Street
Oakland
Phone Piedmont 2815

Agencies: SEATTLE LOS ANGELES FRESNO SAN DIEGO SACRAMENTO

SIMPLEX
TRADE MARK

SIMPLEX BURNERS

For High or Low Pressure Boilers, Water Heaters, Kiln Dryers, Furnaces, Etc. Operated by Fractional H. P. Motors. Guaranteed for Efficiency and Durability.

BUNTING IRON WORKS

Factory Berkeley

1215 FIRST NATIONAL BANK BLDG.
SAN FRANCISCO Phone Sutter 3225

Member of the Oil Burners Manufacturers' Association of California

RAY BURNER
TRADEMARK

Rotary Fuel Oil Burners

FOR HEATING, POWER PLANTS And Industrial Uses

ADAPTED FOR ANY TYPE OF BOILER OR FURNACE
—HIGH OR LOW PRESSURE, 6 to 600 h. p.

W. S. RAY MANUFACTURING CO.
MANUFACTURERS OF RAY FUEL OIL BURNERS

OFFICE AND SALESROOM:
Rialto Building, SAN FRANCISCO
Phone Douglas 8079

Distributors in all Principal Cities

OAKLAND BRANCH
25th and San Pablo Avenue
Phone Oakland 3944

RESIDENCE HEATING

Many prominent California homes are equipped with Rotary Oil Burners, *insuring healthful, efficient and economical heat.*

ROTARY OIL BURNER COMPANY, INC.

159 TWELFTH STREET, OAKLAND PHONE OAKLAND 2994

MAKING HOMES LIVABLE
WITH
BABCOCK
"High Efficiency"
GAS FURNACES

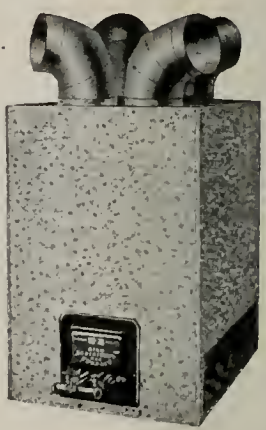
Delivering large quantities of warmed air with its natural humidity retained, the Babcock insures home comfort to your clients.

Long fire travel and unusually large radiation surface mean economical operation. No condensation at the joints.

5 year guarantee. Get our estimates on your new plans.

San Francisco Distributor
FRANK KLIMM, 456 Ellis St.

Alameda County Distributor
PACIFIC GAS & APPLIANCE CO.
1533 Clay Street, Oakland



Babcock Furnace Type 50-80, complete with galvanized steel casing

Babcock GAS FURNACE

C. B. BABCOCK COMPANY
768 MISSION ST., SAN FRANCISCO
MANUFACTURERS AND DISTRIBUTORS OF GAS EQUIPMENT

Pump Governors
Oil-Burner Governors
Reducing Valves
Safety Valves
Oil Valves
Blow Off Valves
Boiler Feed Valves
Vacuum Pump Governors
Vacuum Regulating Valves
Oil Pumping Sets
Little Giant Improved
Oil Burners
Duplex Oil Pumps
Rotary Oil Pumps
Oil Heaters
Draft Gauges
Boiled Feed Pumps

G. E. WITT CO., Inc., Engineers
C. W. VAUGHN, President and Manager
MANUFACTURERS AND DISTRIBUTORS
862-864 Howard St. Phone Douglas 4404 San Francisco, Cal.

SAFETY TREADS

UNDERWRITERS' LABORATORIES, INC. INSPECTED ANTI-SLIP TREAD
FERALUN AMERICAN ABRASIVE METALS CO. NEW YORK

Affords the maximum of safety and there are NO GROOVES to catch the heels

PACIFIC MATERIALS CO.
525 Market Street, San Francisco, Calif.

the ARCHITECT & ENGINEER

Contents

VOL. LXXIV. AUGUST, 1923 Number 2

FEDERAL LAND BANK, BERKELEY - - - - - *Frontispiece*
James W. Plachek, Architect

THE FEDERAL LAND BANK, BERKELEY - - - - - - 51
Frederick Jennings

THE ARCHITECT AND THE JOB - - - - - - - - - 62
Sullivan W. Jones

HOME, SWEET HOME - - - - - - - - - - - - 63
Ross Wilton Edminson, Architect

OLYMPIC GOLF AND COUNTRY CLUB BUILDING - - - 67

LOS ANGELES CIVIC CENTER - - - - - - - - - 73
William L. Woollett

THE ELKS CLUB BUILDING, SAN FRANCISCO - - - 77

NEW CALIFORNIA STATE HOUSING ACT - - - - - - 85
Mark C. Cohn

HIGHWAYS AND BYWAYS OF THE CENTRAL EMPIRES - - 91
E. N. Kierulff, R. S. M.

UNIQUE TOURIST HOTEL - - - - - - - - - - - 101

SAFE CHIMNEY CONSTRUCTION - - - - - - - - - 104

EDITORIAL - - - - - - - - - - - - - - - 106

AMONG THE ARCHITECTS - - - - - - - - - - - 109

Published Monthly by
THE ARCHITECT and ENGINEER *Inc.*
626-627 Foxcroft Building San Francisco
W. J. Kierulff, *President* — Frederick W. Jones, *Vice-President* — L. B. Penhorwood, *Secretary*

Frontispiece
The Architect and Engineer
August, 1923

FEDERAL LAND BANK, BERKELEY
JAMES W. PLACHEK, ARCHITECT

SAN FRANCISCO
PUBLIC LIBRARY

THE
ARCHITECT
AND
ENGINEER

AUGUST
1923

VOL. LXXIV.
No. 2

The Federal Land Bank, Berkeley

By FREDERICK JENNINGS

OF the recent work which Architect James W. Plachek of Berkeley has executed in the Bay Region, the new Federal Land Bank stands as one of the best things he has done. Few buildings in the College City have commanded such favorable comment from the profession, as well as from the layman. It may be safely classed as one of our best examples of traditional classic design. The general mass is excellent. The Ionic columns which support the ceiling of the narrow portico, extending across about one-third of the Fulton street front, are well proportioned, and the entire composition impresses one with its nicety of detail and finished execution. The building is constructed of reinforced concrete, the exterior finish being treated with a cream color waterproof paint that gives the walls the appearance of stone. Unlike most buildings of this character, the photographs do not flatter the architecture. The structure must be seen to be appreciated. Its quiet, simple poise at once suggests a building of semi-public character. Its style might well be adopted by those financial institutions which of late have been investing large sums of money for new branch buildings.

The interior arrangement shows considerable thought, and the architect has endeavored to provide ample space with best possible light for carrying on the business of the institution. The only criticism that could be offered in respect to the interior design is that the columns are a trifle small for the spans, while the capitals are heavy for the columns. The building is two stories and basement and covers an area

PORTICO, FEDERAL LAND BANK, BERKELEY
JAMES W. PLACHEK ARCHITECT

ENTRANCE, FEDERAL LAND BANK, BERKELEY
JAMES W. PLACHEK ARCHITECT

of seventy feet frontage by one hundred and four feet in depth. The lot is 100 by 130 feet. This permits two driveways, one along each side of the building. Between the sidewalk line and the building, and flanking either side of the entrance portico and steps, is space for small lawns with ornamental trees and shrubs. The architect has introduced a note of color here by specifying red brick laid with narrow side up as the material for the steps and the floor of the portico, affording a pleasing contrast with the cream white walls of the building.

The entire first floor has for its decorative scheme ornamental columns supporting a beautiful plaster ceiling. As one enters the first

FEDERAL LAND BANK, BERKELEY
James W. Plachek, Architect

floor through a vestibule finished in marble, he is greeted by a large public lobby finished in three tones of marble. The lobby is flanked on both sides by offices. Beyond is a large working space extending entirely across the building north and south, and reaching back to vault and storage rooms. These also extend across the full width of the bank, while above them is a large glassed-in mezzanine floor. On the second floor are offices for the legal department, appraisers and engineers. The basement has ample space for filing cabinets, storage rooms and vaults. The building was erected by Messrs. Lawton & Vezey of San Francisco and Oakland at an approximate cost of $125,000.

A few other examples of Mr. Plachek's recent work are shown in the accompanying pages, not the least interesting of which is the design for a church in San Mateo. Mr. Plachek has grasped the real Spanish feeling here, and while only a portion of this edifice has been built to date, due to financial handicap, it is hoped that eventually the plans as

originally proposed will be carried out, thereby giving San Mateo a very creditable contribution to ecclesiastical architecture.

Two or three commercial buildings are shown, including the Whitecotton office structure which is the home of the Berkeley Chamber of Commerce, and the Students Transfer and Storage warehouse. The latter is a fireproof building, constructed of reinforced concrete, and occupies a prominent corner in the college town. The exterior design possesses a refinement too frequently lacking in structures of this type. It probably never will be classed as an eyesore to the community. It is too dignified for that.

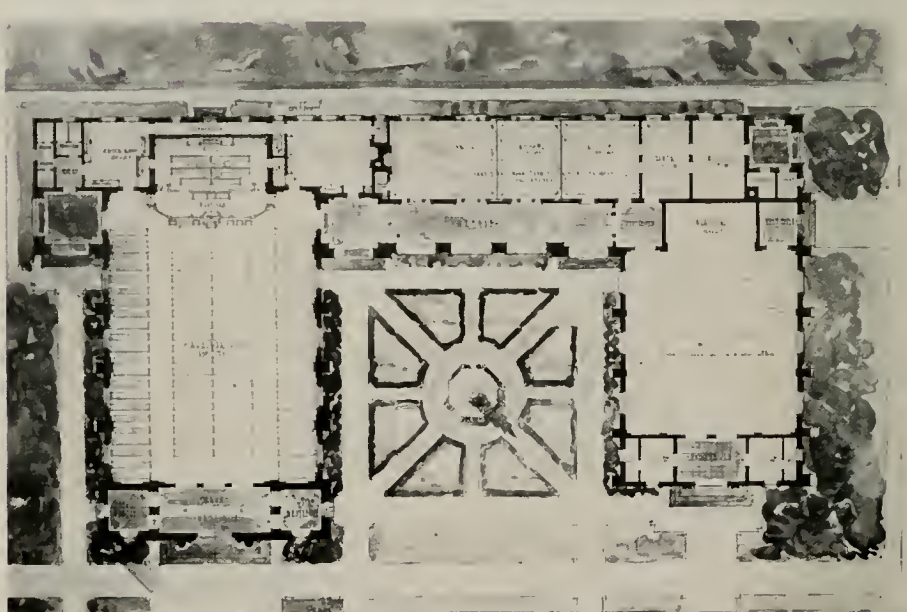
INTERIOR, FEDERAL LAND BANK, BERKELEY
James W. Plachek, Architect

Aluminum Paint Makes Radiators Less Efficient

THE aluminum or bronze paint generally applied to radiators greatly reduces their effectiveness and makes it necessary to have a larger surface for the same heating effect, according to experiments performed by Dr. W. W. Coblentz of the Bureau of Standards. Dr. Coblentz finds that the heat radiated from an aluminum painted radiator surface is less than a third of that emitted by a radiator of the same size painted with a non-metallic paint, enameled, or simply allowed to rust.

On the other hand he finds that aluminum paint is a very effective means of reducing the amount of heat transmitted through a thin material. Applied to the under side of a tent or awning it reduces by three-fourths the amount of heat from the sun which gets through the cloth, while if used on the cover of an automobile or ice wagon it cuts in half the heat let through and makes the temperature inside the vehicle more nearly that found in natural shade, thereby making it much more comfortable.

CHURCH FOR SAN MATEO
James W. Plachek, Architect

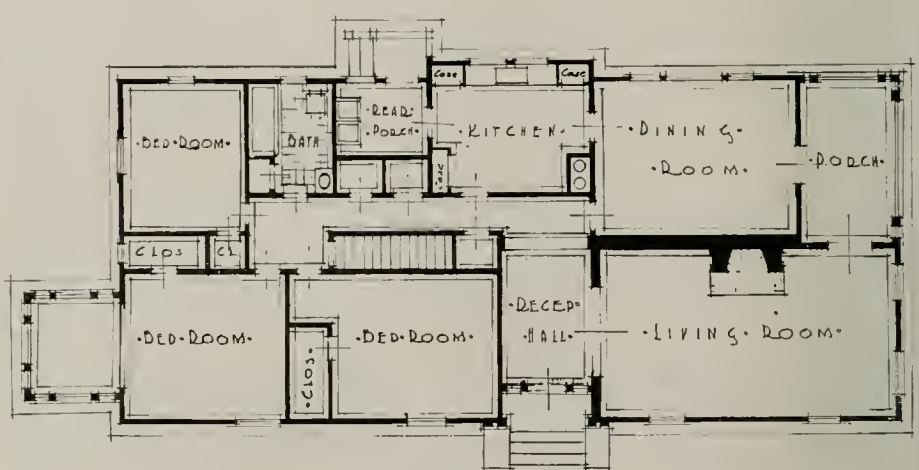


PLAN, CHURCH FOR SAN MATEO
James W. Plachek, Architect

OFFICE BUILDING FOR W. W. WHITECOTTON, BERKELEY
James W. Plachek, Architect

BUILDING FOR W. C. MORSE, OAKLAND
James W. Plachek, Architect

STUDENTS TRANSFER BUILDING, BERKELEY
James W. Plachek, Architect

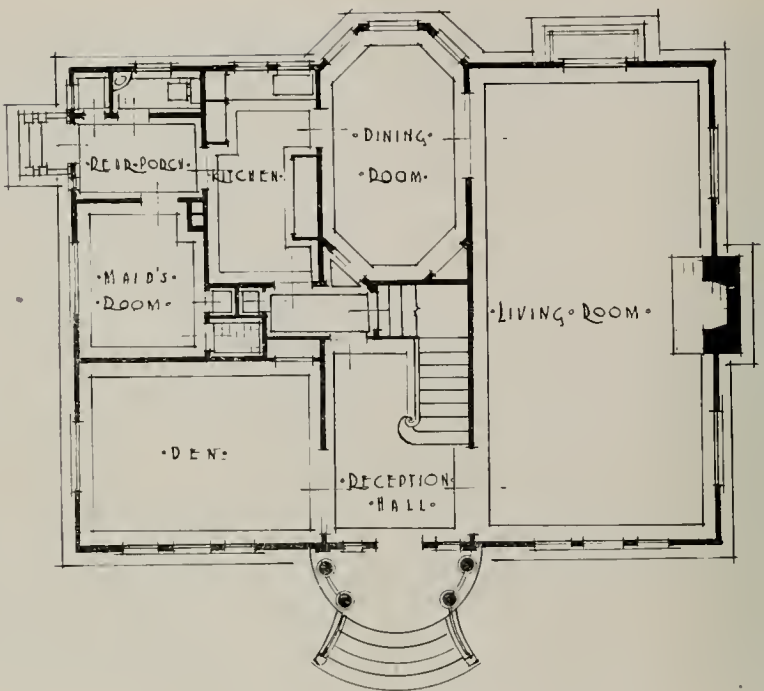


·FIRST··FLOOR·PLAN·

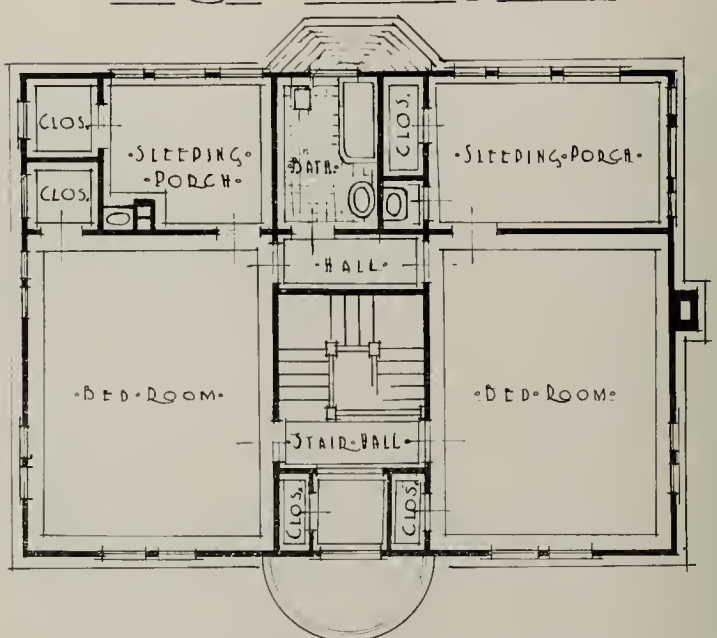
PLAN, HOUSE FOR MR. J. BAUME, BERKELEY
James W. Plachek, Architect

HOUSE FOR MR. J. BAUME, BERKELEY
James W. Plachek, Architect

INTERIOR, HOUSE FOR MR. J. BAUME, BERKELEY
James W. Plachek, Architect



FIRST FLOOR PLAN



SECOND FLOOR PLAN

HOUSE FOR MRS. SARA KELLAR, BERKELEY
JAMES W. PLACHEK, ARCHITECT

HOUSE FOR MRS. SARA KELLAR, BERKELEY
James W. Plachek, Architect

INTERIOR, HOUSE FOR MRS. SARA KELLAR, BERKELEY
James W. Plachek, Architect

The Architect and the Job

By SULLIVAN W. JONES

LET us assume that we have got the job. We are human, and are tingling with the pure exhilaration of success, tinctured with ambition. We are just an average architect. We are about to go through an average experience, which stretches over a considerable period. It begins with exquisite satisfaction. We know the joy that comes in contemplating the creation of something. Every fibre responds to the urge, the opportunity to conceive. We have a way of regarding this joyous beginning as architecture. Would it were so. Then there comes a laborious period of incubation, during which we form and build up, on paper, the tissues of our offspring. Surveys, codes, ordinances, service requirements, cruel money limitations that fetter the imagination and take the joy out of life, sewer levels, sub-soil conditions, floor loads, mechanical equipments, materials, systems, manufacturers, conflicting claims, hesitation, data not found, a multitude of catalogues, indecision, discussion, conference, decision, working drawings and specifications, all stirred up into a fog driven by unrelenting time,

Then there comes a pause—for bids. A period of suspense, when every move and gesture is searched for its significance. Then the paroxysm.

The price is too high!

Changes, cuts, substitutions, new bids. Thus do we bring our offspring into being. A hole in the ground, footings, steel, walls, floors, roof, a network of pipes, ducts and conduits, machinery—and finished. All cleaned down and out, followed by a sigh of relief.

No, not finished.

Groans for last payments. What is the matter? The insides don't work. The structure looks all right—it's architecture. But it needs doctoring. The windows leak frigid air. The cellar, the walls, and the roof leak water just when they shouldn't. There are leaks also in the lighting circuits. Because the windows leak air, the building is underheated. It's under-elevatored also. The floors dust. We thought they wouldn't, as we used Tom Smith's compound. He said they wouldn't. The paint is blistering. Some one on the tenth floor wants gas, and there isn't any in the building. That ceiling we plastered on the under side of the concrete slab is loose and about to fall in spite of the plaster bond we used.

But it's ours, this building, this troublesome offspring, so we have to pull it through. The specialists, quasi-specialists, and quacks with cure-alls are consulted or thrust their wares and services upon us. We are sure that everything is going to be all right. After a time that seems eternity, things begin to straighten out, or seem to, which is the same thing, according to Einstein. Then we kiss the job good-bye and thank God it is out of the office. Straightway we start the process all over again. And because we are human, though architects, we forget the anguish and remember only the pleasures.

* * * *

Two Reasons

"I can't imagine why you call your place a bungalow," said Smith to his neighbor.

"Well, if it isn't a bungalow, what is it?" said the neighbor. "The job was a bungle, and I still owe for it!"

HOME, SWEET HOME
Don Barber, Architect

Home, Sweet Home

By ROSS WILTON EDMINSON, Architect

Photographs by the Author

IN reproducing the home of John Howard Payne, where he wrote his famous song, "Home, Sweet Home," the General Federation of Women's Clubs began a country-wide drive for better homes in America. They set aside one week, June 4 to June 10, as Better Homes Week, in Washington, D. C., and in order to illustrate the possibilities of a comfortable home, the "Home, Sweet Home" house was constructed. Their choosing of the old Payne house as a model was a good selection. Constructed at Easthampton, Long Island, in 1660, it has stood the test of time, and its sound pine timbers are in an excellent state of preservation.

We find today much criticism about poor construction which seems to be prevalent throughout the country. In trying to eliminate this, the Department of Commerce, as stated in the American Builder, has perfected a new Dwelling House Code, which was used in building "Home, Sweet Home." Although the replica is not constructed of wood, it is, however, made of fire resisting materials to meet modern requirements. Mr. Don Barber, well known architect of New York City, designed the house, using concrete blocks for the walls, and finishing them with stucco. The architecture is early New England Colonial.

The "Better Home," as it is called, was built in record time. On the twenty-sixth of April Secretary of Commerce Hoover broke the ground just south of the Treasury building for the temporary foundation upon which the house stands. On June fourth, at the opening exercises of the "Better Home," Miss Lida Hafford of Washington, D. C., Director of the Federation of Women's Clubs, presented the key of the finished model house to President Harding, who unlocked the home and formally dedicated it to the American people.

Upon entering the living room on the left of the entrance hall, one finds the room homelike and beautiful, with its log fireplace and

HOME, SWEET HOME
Don Barber, Architect

old style furnishings. The housewife is overjoyed to find in the kitchen a large gas stove, porcelain sink with a combination hot and cold water faucet, china closet and ice box; not to mention a long handled, covered dust pan. Adjacent to the kitchen is a delightful breakfast room, all in white, with its Pullman table, seats, and china closets. The dining room is furnished with simple, old time furniture, such as was used in New England homes a century ago.

The second floor is reached by quaint stairs from the hall. Three spacious bedrooms, charmingly furnished, are found here, together with an up to date nursery. Convenient cedar closets are built in between the rooms. There are two bathrooms, with tile floors and walls, and furnished with showers, electric heaters and porcelain wall soap dishes.

Mr. L. Porter Moore, President of the Home Owners Service Institute, New York City, raised the funds necessary for the construction of the model house, through the various associations and manufacturers of building material. It is hoped that our home builders of today will follow out the idea of better construction, which is well illustrated in the "Better Home," and profit by the arduous studies of the Federation of Women's Clubs and the Department of Commerce on this subject.

* * * *

Painting Structural Steel

Structural steel should have at least two coats of red lead paint, and each coat, no matter how many, should be slightly colored, in varying degrees, so that the inspector may readily detect faulty work. A little lampblack with the red lead will do for the purpose, and this black is itself a useful addition in securing a uniformity of the thickness of the film. Graphite and lampblack are sometimes added to red lead paint, the purpose being to cause the red lead paint to work easier under the brush than the red lead paint alone will do, for it is a very stubborn liquid to spread out.

Wage Changes

The National Industrial Conference Board reports that 287 wage increases were granted in the United States during the month ending June 14th. The tabulation of wage changes since the first of the present year are as follows:

	Reductions	Increases	Total Changes
Jan. 15-Feb. 14	0	42	42
Feb. 15-Mar. 14	1	37	38
Mar. 15-Apr. 14	0	229	229
Apr. 15-May 14	1	201	202
May 15-June 14	1	287	288

The American Contractor in its issue of June 16th summarizes conditions in 60 cities of the country with respect to wage changes in the building industry as follows:

"Each month since April, 1922, wage scale raising has predominated in the changes, and the total number of raises considered by trades in these cities has been great enough so that after deducting all decreases the net number of 549 for the 12-month period remains. The net balance of raises for April, 1923, which is the twelfth month of this period, is 200.

"The above figures are past history. Considering May of this year, the beginning of a new 12-month period, we find that the number of raises by trades, counting those of Chicago, which took effect June 1st is 280, and the number of decreases is 16. This leaves a record-breaking number, 264, representing the net of increases.

"Out of the sixty cities, thirty-nine report May changes, all but ten of which represent increases in one or more trades."

* * * *

Germans Build Homes of Cartridge Boxes

Scarcity of building material has been relieved in some of the manufacturing centers of Germany by utilizing the small boxes which were used to carry cartridges from the factories to the ammunition supply depots near the fighting fronts during the war.

An enterprising artisan conceived the idea one day of using these discarded boxes in building himself a home. "Housing Betterment" says that the boxes, which are just a little larger than the standard-sized brick, were filled with clay and then laid in mortar in a wall. The idea was taken up by others, and the result was the erection of quite a number of these cartridge box houses. They are one story high and roomy enough for one family.

* * * *

Back in 1890

The world's most famous automobile manufacturer was working in a bicycle shop.

A millionaire hotel owner was hopping bells.

America's steel king was stoking a blast furnace.

An international banker was firing a locomotive.

A President of the United States was running a printing press.

A great merchant was carrying a pack on his back.

A railroad president was pounding a telegraph key.

There's always room at the top—where'll you be in 1954?—Disston Crucible.

OLYMPIC GOLF AND COUNTRY CLUB, SAN FRANCISCO
BAKEWELL AND BROWN, ARCHITECTS

SAN FRANCISCO PUBLIC LIBRARY

Olympic Golf and Country Club Building

A SIMPLE Latin form of architecture inspired from the Italian farm house and early California types, without any of the objectional features of the so-called Mission style, has been used as especially appropriate for the proposed new Olympic Golf and Country Club building in San Francisco by Messrs Bakewell & Brown, the architects whose design was chosen in competition.

The plan is very simple, so that little comment is necessary. However, it may be well to call attention to certain features that seem particularly advantageous. The entrance is from the upper level, giving the sheltered east and south exposures to the larger and more important rooms and also giving these rooms an unobstructed outlook.

The southern exposure is featured by a patio. This patio which is sheltered from the prevailing winds can be used in pleasant weather and even when not in actual use will form a very attractive feature as it is sufficiently protected and sunny to make a beautiful garden possible. It adds interest to the appearance of the building and gives fine light to the surrounding rooms.

The dining room and living rooms combine the advantage of the best exposure with that of the best views. The dining room and its terrace overlooking the lake view.

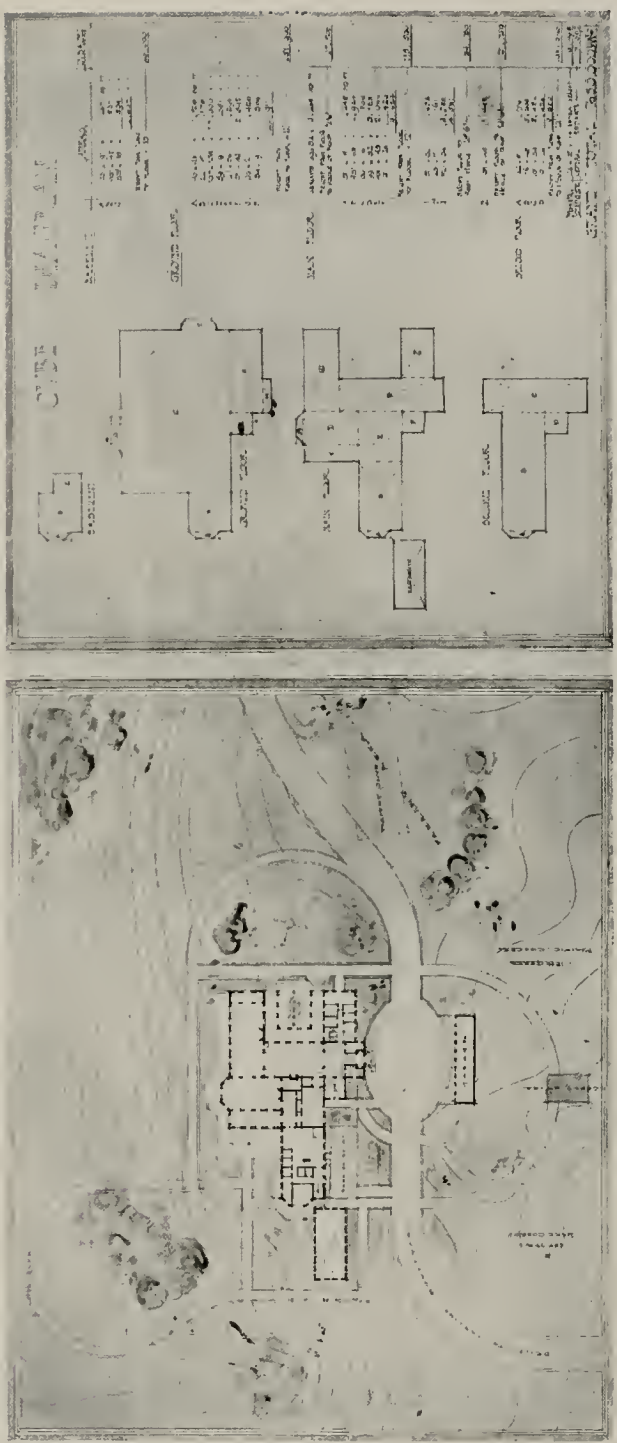
The terraces shown are in protected positions and in pleasant weather will be quite practical. However, it is realized that very often these terraces will not be usable, and covered and glazed porches are provided for such times. The terraces apart from such use, are pleasing in appearance and have the very practical advantage that they make it possible to increase the locker space materially, as they give light and commodious ground floor room.

The main living rooms open up nicely and are arranged to be adaptable for entertainment purposes. The living room and dining room are high and the treatment of open trusses will make them impressive as club rooms.

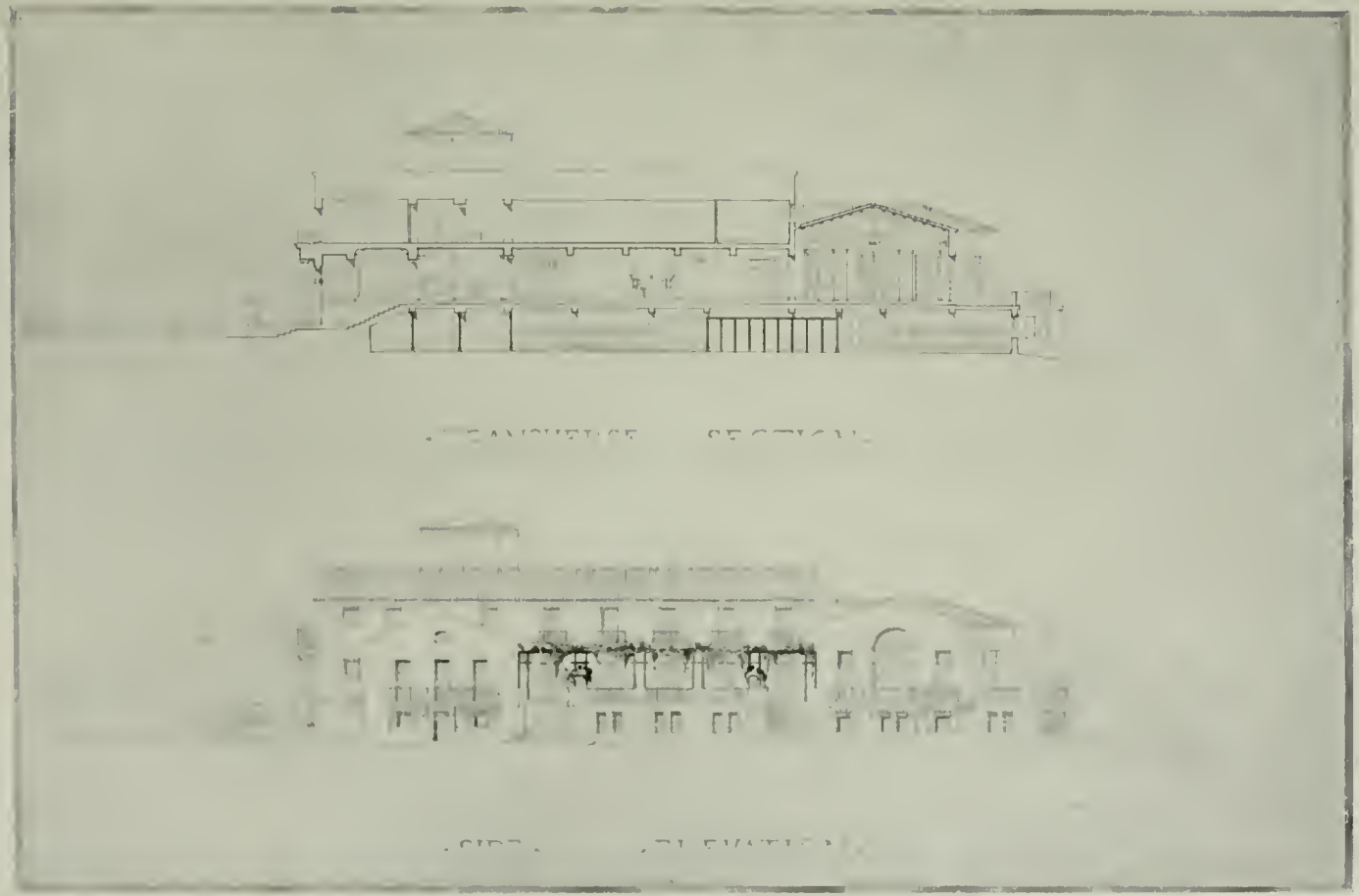
The service and administration arrangements are excellent. The offices located next to the entrance are light and convenient and the same is true of the coat and cloak room facilities. The kitchen and pantry service is direct and simple.

Access to the locker rooms from the various tees and caddy house has been carefully considered.

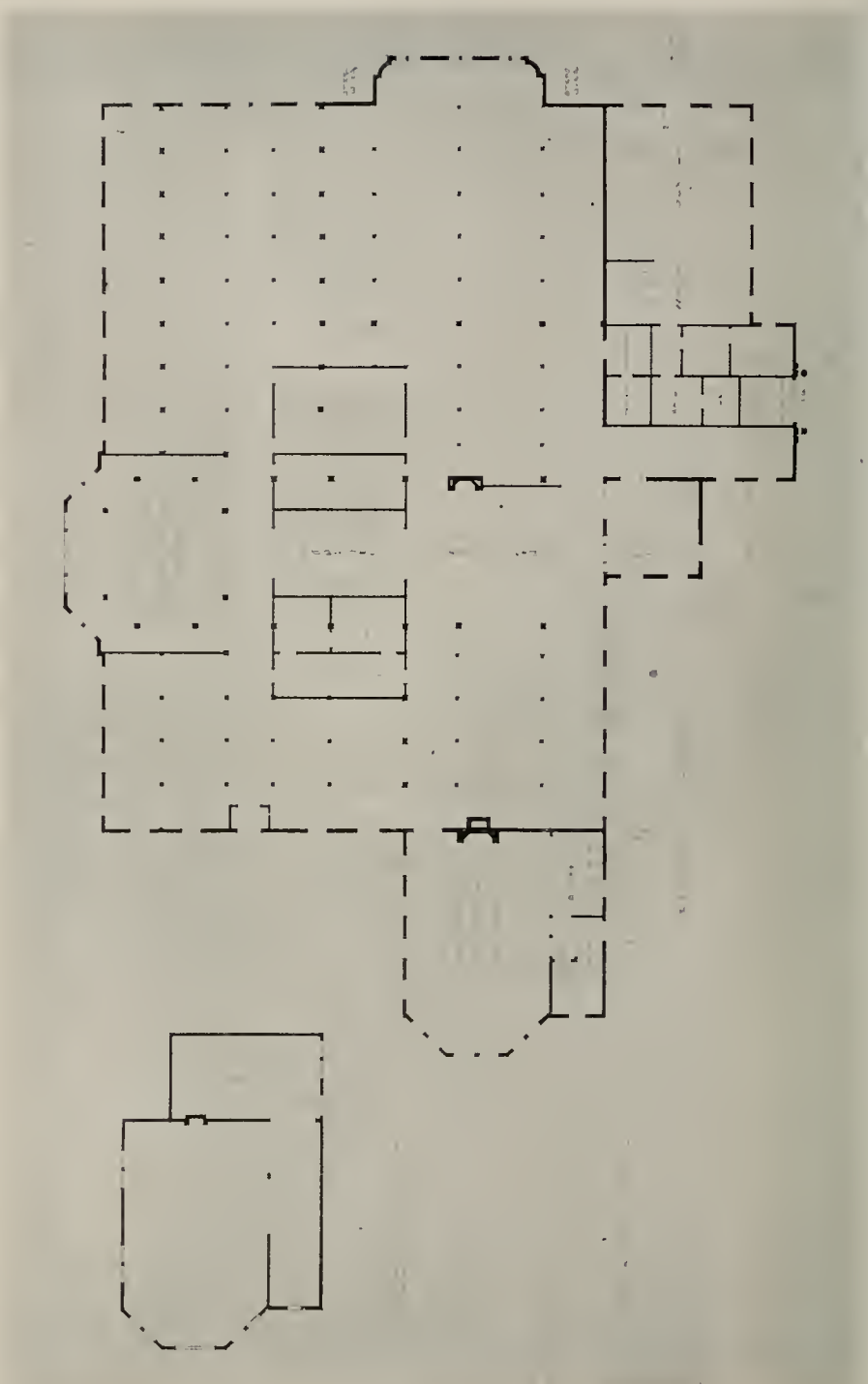
The simplicity of the architectural features makes it possible to adequately execute this design with due regard for economy of cost.



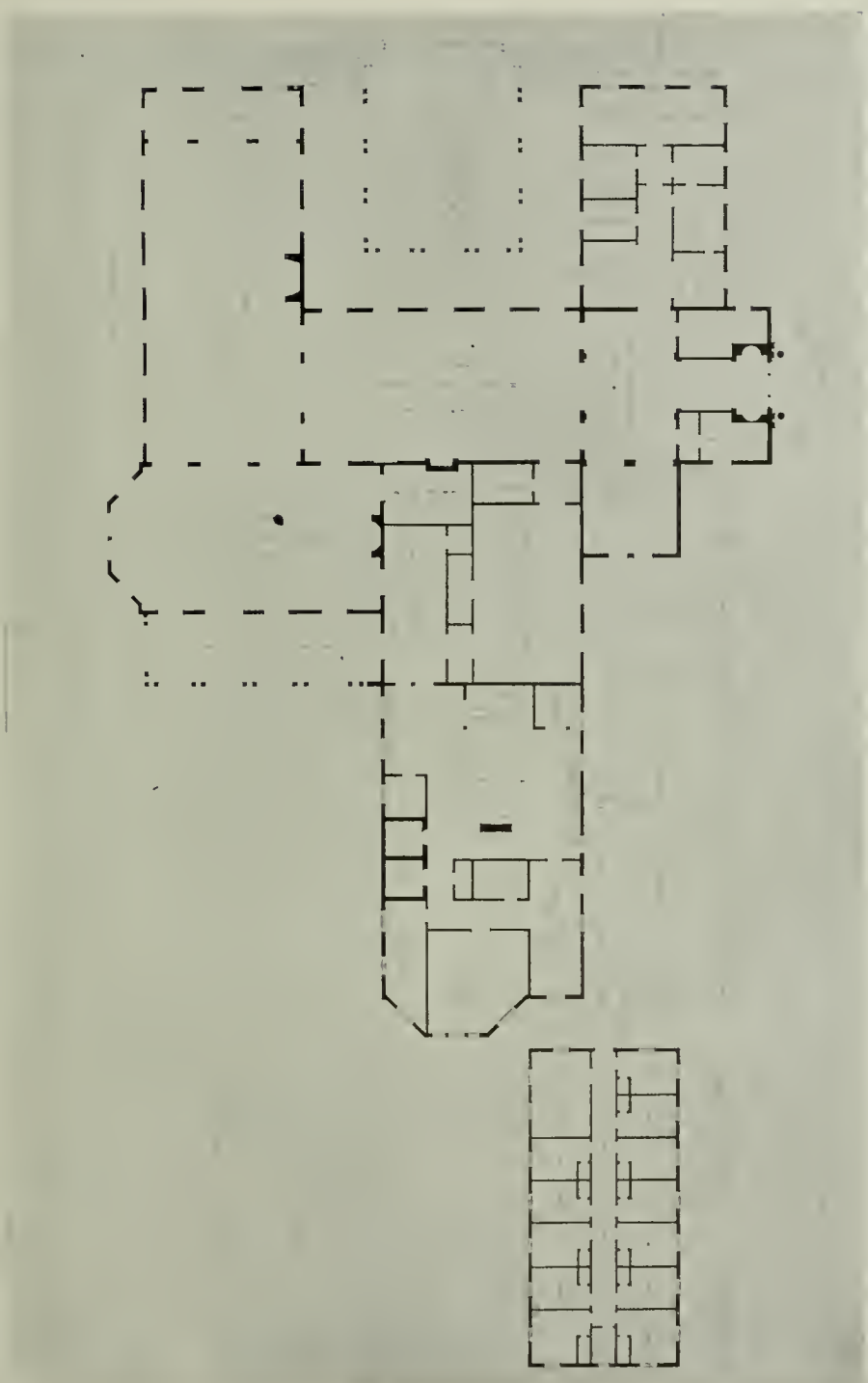
PLOT PLAN AND CUBE DIAGRAM. OLYMPIC GOLF AND COUNTRY CLUB
SAN FRANCISCO
BAKEWELL & BROWN, ARCHITECTS



SECTION AND ELEVATION, OLYMPIC GOLF AND COUNTRY CLUB
SAN FRANCISCO BAKEWELL & BROWN, ARCHITECTS



GROUND FLOOR PLAN, OLYMPIC GOLF AND COUNTRY CLUB
SAN FRANCISCO BAKEWELL & BROWN, ARCHITECTS



MAIN FLOOR PLAN, OLYMPIC GOLF AND COUNTRY CLUB
SAN FRANCISCO BAKEWELL & BROWN, ARCHITECTS

Elimination of Irresponsible Bidders

ARCHITECTS should select bidders who are responsible, and should not permit bids of men who are not responsible to be held as a club over the heads of reliable bidders in order to force prices down, writes a member of the Associated General Contractors of America. Continuing, he says:

"Time and again architects get little men to figure jobs that are beyond them. They make errors and mistakes all the way through and come out with a low bid; then the architect goes to some contractor with a good name and responsibility and holds over him the price of the other to induce him to meet the other fellow's figure. That is tried hundreds of times, and that is something as to which we must educate the architect. The architect must recognize the efforts we are putting forth to bring irresponsible men to their senses, and through them only will we reach the private individual who is always putting all contractors in the same class.

"The bonding companies can be of the greatest of help in this elimination process. With all due respect to the bonding companies' representatives, who state that the prime requisite for a surety bond is honesty, every one of us knows of cases where men, utterly without principle or pretense of honesty, have secured surety bonds because they had a large statement or a silent partner who had. Bonding companies stand in our way for a general clean-up of irresponsible contractors.

* * * *

More Reasons for High Building Costs

The shortage of men in the building trades assumes startling proportions when due consideration is given to the fact that although the population of the United States increased 14,000,000 in the decade from 1910 to 1920, the number of mechanics in the construction industry decreased 80,000. It is estimated that with the tremendous increase in population at least 3,000,000 additional homes were needed. Under normal conditions it may be assumed that a large percentage of the new houses needed would have been built, but it must be remembered that during the war the home building program was very largely deferred, as was also a large part of the commercial type of construction. The above facts, together with the following figures showing the decrease in a few specific trades, present a strong argument for the need of a comprehensive system of trade education:

	1910	1920
Bricklayers	161,000	131,000
Plasterers	47,000	38,000
Roofers and Slaters	14,000	11,000
Stone Cutters	35,000	22,000
Painters and Glaziers	273,000	248,000

* * * *

Advertising

A subscriber to a Missouri paper once edited by Mark Twain wrote him stating he had found a spider in his paper and wanted to know if it meant good or bad luck. Mark replied:

"Old Subscriber: Finding a spider in your paper was neither good nor bad luck for you. The spider was merely looking over our paper to see which merchant is not advertising, so that he can go to that store, spin his web across the door, and lead a life of undisturbed peace ever afterward."

Los Angeles Civic Center

By WM. L. WOOLLETT, Architect

"Where there is no vision, the people perish"

IT has been said that to clearly state a problem is to solve the problem. Sometimes I wish I could thus state the problem of the Los Angeles Civic Center.

To divest this question of preconceived notions of what a civic center should be is necessary. The unique and bold topography of this city at the chosen point is different from that found in any other city in the world. There are all the possibilities of a wonderful solution if we can once persuade ourselves to be true to the genius of our own opportunity and not ape or seek to be like other cities.

Recognition of the unusual topographical conditions will reveal facts which may materially assist in the statement of the problem. The chief material fact resulting from these topographical conditions is the lack of space.

The congestion of this district has already been sensed by the dominant minds of the community. The dramatic movement of the center of interest from the near Plaza district to Seventh and Eighth streets was the natural result of a proper vision of the needs of our commercial district. Now that the enlarged business district has been accomplished and the necessity for putting foundations under these accomplishments, is apparent, it is desirable to redeem the older portion of the city, but to redeem it with a vision of its business requirements.

Happily for the city, the proposed development of the civic center in this old business district brings before our attention the propriety of utilizing this narrow congested spot between the hills—and the river and railroad facilities—for a plaza and group of public buildings, or of developing it as a strictly business center. Undoubtedly a strictly modern business center would do more to concentrate and centralize the business of the great city of the future than would the building of a civic center along conventional lines.

The actual location of some of our public buildings in this locality seems to point to a solution which combines the two ideas, namely: to so plan the district, as to facilitate the building of a nobly laid out business district, augumented and complemented by a pleasing disposition of public monuments in the form of administrative buildings for the city.

This section, exceedingly valuable as a commercial thorofare, is also very interesting as to its possibilities for a civic center. The immense commercial and industrial life of this vast city surges about the base of low hills, crowned now by a disintegrating mass of second and third class dwellings, apartment houses, etc. Tunnels through these hills pour their thousands into the vortex of seething humanity, congested between the railroads and the river on one hand and the hills on the other. These hills dominated by an inferior development, form the skyline of this imperial city. In full view of these promontories the surging life of five millions of people is destined ere long to pass back and forth. This theatrical and titanic spectacle shall constantly pass in review before these mouldering ruins.

To gouge out a portion of these hills and to plant by force a civic center scheme in the vortex of this great city's geographic and traffic center, is now what is proposed. May there not well be a somewhat more practical way of gaining the ends desired than the way proposed?

Let us consider the ends desired. First, we seem to have accepted the idea that the chief buildings connected with the administration of the city and county government, etc., should be grouped in this section. Second, the traffic system of this area should be opened up. Third, the above mentioned buildings should be so disposed so as to serve their practical purpose, at the same time proving an additional feature of beauty to the city, yet without impeding the commercial uses of the locality.

Curiously enough, all these essential requirements may be answered in one statement, i. e. by an arrangement which places part of the administrative group on the high grounds contiguous to the naturally congested thorofares.

As to the grouping of the public buildings in this locality, it is not necessary that they be laid like fish in a sardine box or grouped about a square. The ends desired may be obtained quite as well if part of these improvements are set to one side on higher ground near by, thus freeing the area immediately contingent to the commercial thorofare for business purposes.

It is evident that with widened thorofares the area now shown in the Cook and Hall plan to be covered with administrative buildings will become immensely valuable for business purposes. Therefore, as much as this area should be conserved for commercial and utilitarian purposes as is possible and the higher ground, which is not and cannot be made available for practical purposes of a commercial city, should be used for administrative public buildings.

In this way an active business center may be revived, giving proper support and foundation to the present development of the city at or near Pershing Square. The areas which are devoted to business purposes should have streets at least twice as wide as the present streets and on the axes of these streets, and yet outside of the congested business areas, should be the administrative buildings, thus giving beautiful vistas for these public monuments.

The plan which I have proposed is a compromise plan—it aims to take advantage of properties already owned by the city—to widen the thorofares (quadrupling the tunnels on Hill and Broadway)—put a great public building or monument on the axis of each of the main five streets (Hill, Broadway, Spring, Main, and Los Angeles)—making an acropolis, the public offices on which would be reached by elevators from Broadway levels.

This is a scheme of picturesque levels, public buildings which dominate the city's skyline, and practical provision for the commercial aspect of the problem. The plan can be improved by study. It was made to demonstrate a practical compromise between the pet theory of civic center enthusiasts and the necessities of a very special problem presented by the peculiar topography of this locality and the persistent and practical demands of the commercial situation.

* * * *

Tests Point Way to Safer Elevators

ABOUT three-fourths of all fatal elevator accidents are found to occur at the hoistway door, either because of the door being opened when the elevator is not there or because of the elevator starting when the door is open. These accidents can be prevented by a reliable interlock, as when such a device is used the elevator must be stopped at the floor before the door can be opened, and the door must be closed before the car can be started again.

During the past year the United States Bureau of Standards has been conducting tests to determine the reliability of the various types now on the market. The devices have been given endurance tests under normal conditions, they have been tested in a corrosive atmosphere, in a dust laden atmosphere, without lubrication, and under conditions of misalignment likely to occur in practice.

The tests will permit city governments to base their approval of such devices on actual performance tests instead of on visual inspection alone. The results have also been made available to the manufacturers of the devices tested, and in most cases they have improved their designs in accordance with the suggestions offered.

* * *

Counting the Particles in a Cubic Inch of Cement

IN a single cubic inch of Portland cement, such as the manufacturers ship out by the train load, there are approximately 14,000,000,000 particles.

How would you go about telling whether there were that many?

So far as meeting the fineness requirements of the standard specifications is concerned—the specifications established by the United States Government and the American Society for Testing Materials—certain exceedingly fine sieves are close enough counters. One of these sieves has 200 hair-like wires to the linear inch, which means 40,000 openings to the square inch. It is more closely woven than a fine quality of silk dress goods. And 78 per cent at least of the finished cement particles must be small enough to sift through it.

The making of such a sieve is an art in itself. Only the best quality of extremely fine bronze wire, drawn through diamond dies, is usable. One mile of this wire is needed to weave a single square foot of this sieve. In the finished sieve, both the wires and the tiny holes between must be uniform in size.

The sieve test gives you as much as you really have to know about the fineness of cement to meet the standard specifications, although most of the cement particles are much smaller than the minute holes in the sieve. But for certain experimental work, in their search for a better product the manufacturers wanted to know more. They wanted to know the exact size of the particles that went through the sieve—and in that way approximately how many there were to the cubic inch. So they called an air analyzer into the service.

The chief difficulty about measuring the particles of cement had been that they stuck together. It was not certain whether one or several were being measured. The air analyzer takes care of this. It consists of a series of brass stacks and nozzles, and by blowing samples of cement up the stacks, the particles are thoroughly separated. Their size can then be determined by microscopic measurement. It has been found in this way that it would take six million average cement particles, laid closely in rows, to cover a square inch of glass.

That is the fineness of finished cement, which is the product of the grinding of cement clinker. The raw materials from which the clinker is made by kiln burning must be even finer. Eighty-five per cent of them, commonly, must shake through the 200-wire sieve, if the correct results are to be obtained in burning. Where coal is used, it also must be pulverized to approximately this fineness, to get the right fuel efficiency.

Eight separate heavy crushing and grinding operations are required to accomplish the pulverizing necessary in a typical cement mill.

ELKS CLUB BUILDING, SAN FRANCISCO
F. H. MEYER & A. R. JOHNSON, ARCHITECTS

The Elks Club Building, San Francisco

WHILE the final plans for the new Elks Club building in San Francisco are somewhat changed from those shown in the accompanying pages, the general scheme, as indicated in the perspective and floor plans, has been followed. The Spanish-Gothic type of architecture has been adopted for the exterior treatment while the interior motif is strongly Italian Renaissance. Construction of the building, which will represent an outlay of $850,000, will start within the next sixty days, according to the architects, Frederick H. Meyer and Albin R. Johnson, who are now at work on the final drawings.

The selection of a site for the building presented difficulties, not the least of which were problems of location and cost. When the final selection of a site was made on the north side of Post street, between Powell and Mason, the directors felt this was the best in the down town section within their means. The property is ninety foot frontage, by one hundred and thirty seven and a half feet in depth. The site, an inside lot, increased the architects' problems.

In the basement will be located a swimming pool, dressing rooms, and a complete hydro-therapeutic department, consisting of steam rooms, hot rooms, showers, etc. The swimming pool itself will run through two stories and will be thirty by seventy-five feet, with large clear story windows opening to the north. A sub-basement will contain storage rooms, heating and ventilating machinery, refrigeration, servants' dining room, etc.

The first floor will have stores and a spacious entrance, keeping in mind that at some future date the westerly store will be taken over for club purposes. In the rear is the upper portion of the swimming pool, with a spectators gallery. The entrance for the help is on the easterly side of the first floor, communicating directly with the service elevator at the extreme end of the lot.

It will be observed that the plan is divided longitudinally in two sections—a wide middle section and two narrow bays on each side, which permit the placing of the smaller units, such as toilets, elevators, stairs and kitchen on either side of the main entrance.

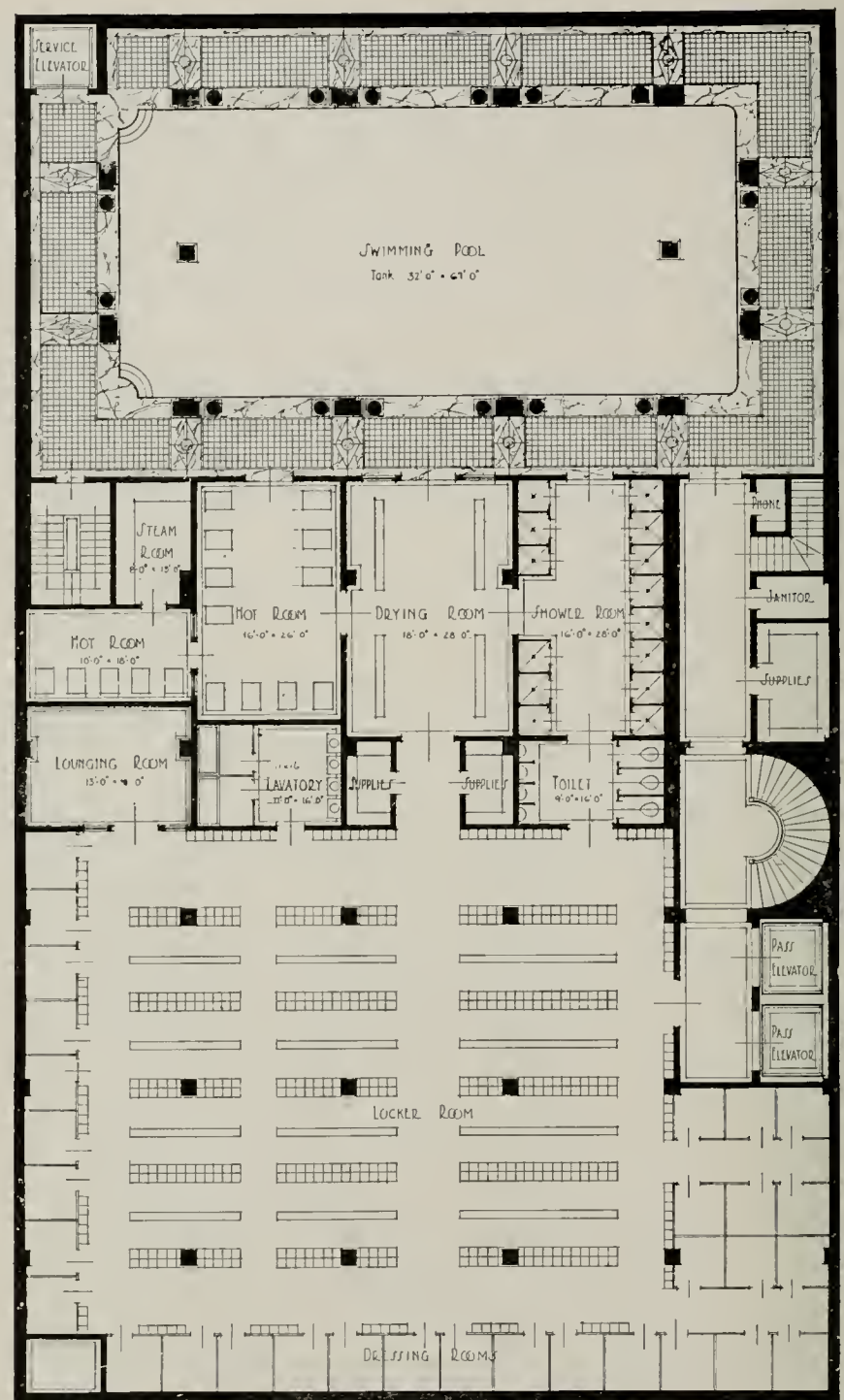
From the second to the fourth floors will be club and lodge rooms, the second floor being used entirely for the lodge rooms and anterooms. The former will be equipped with a stage and gallery. By placing the auditorium on the second floor the problem of handling a large crowd by elevator service is successively solved.

The third floor will be occupied by the lounging room, dining room and kitchen, the plan is so arranged that the entire floor may be used if necessary for a dinner dance.

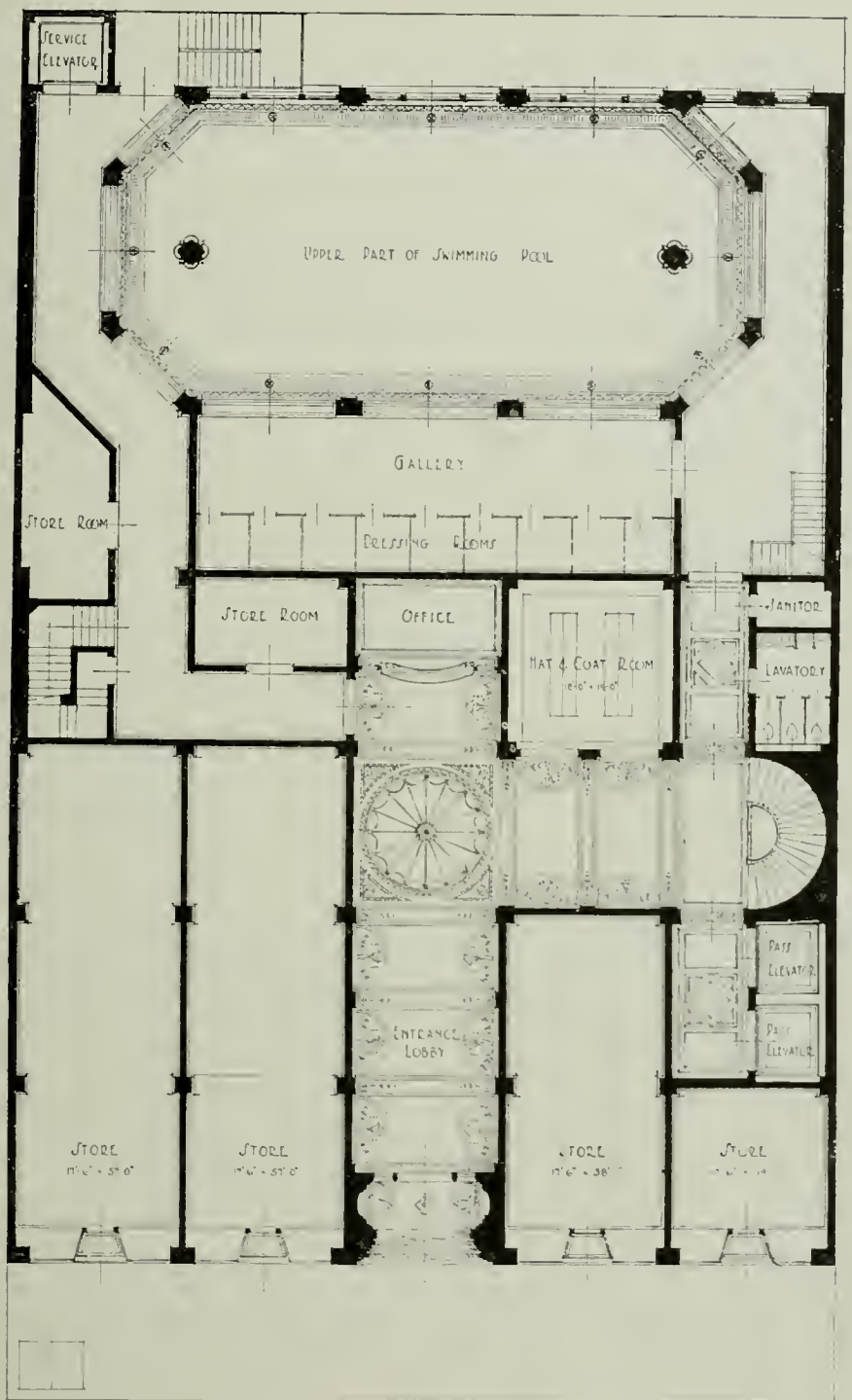
On the fourth floor will be located the game, billiard and card room and buffet.

During the time that the dining room and lounging room are used jointly, many of the members who do not care to join in the festivities, may use the fourth floor rooms and not be deprived of the use of the club house by any special activity.

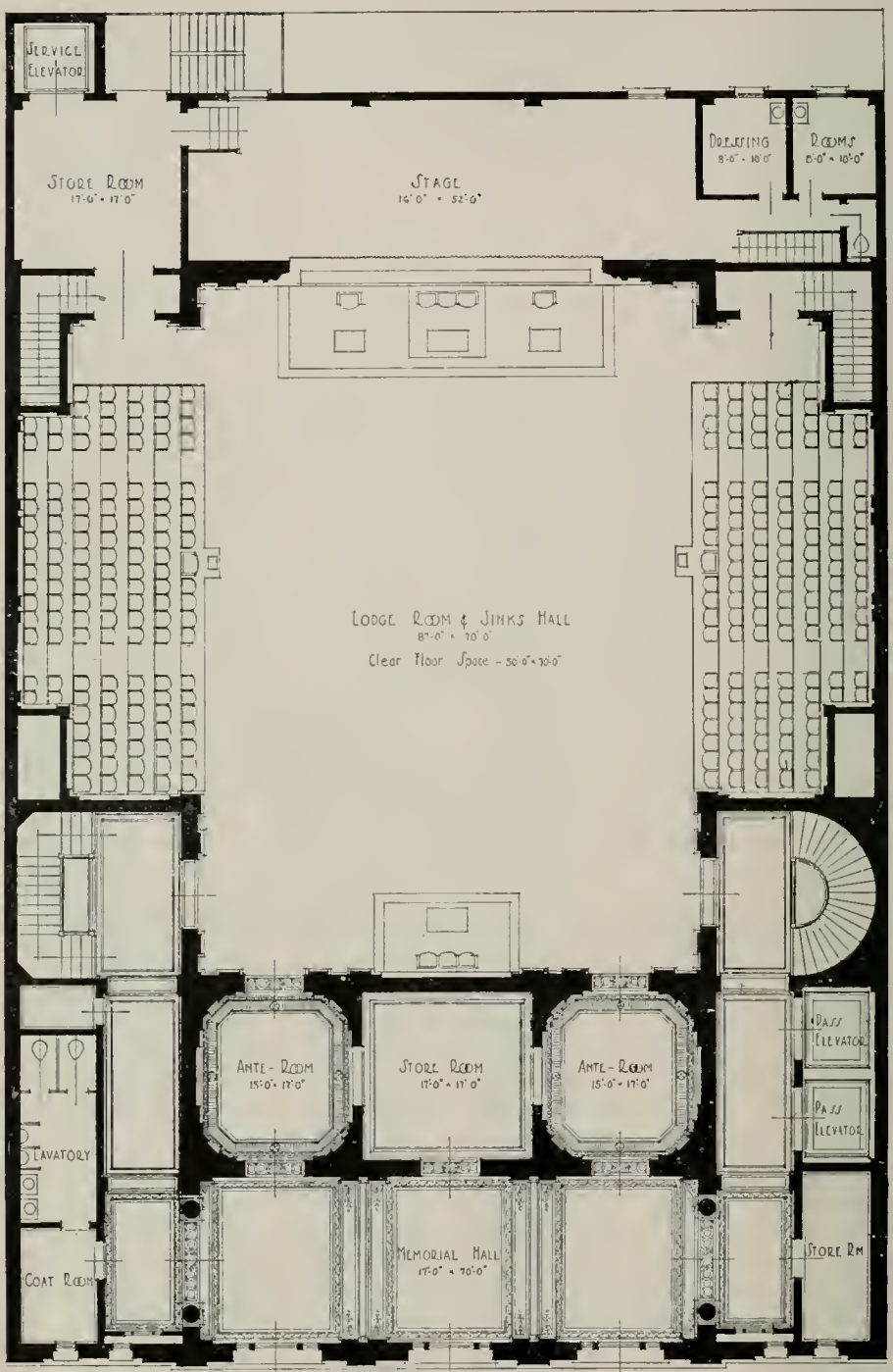
The remaining floors, from the fifth to the twelfth, will be occupied by living rooms, a bath and a shower adjoining each. The directors very wisely have provided for a future extension over the rear of the club rooms so that at least fifty more bed rooms may be added at a later date, increasing the living quarters to one hundred and fifty rooms.



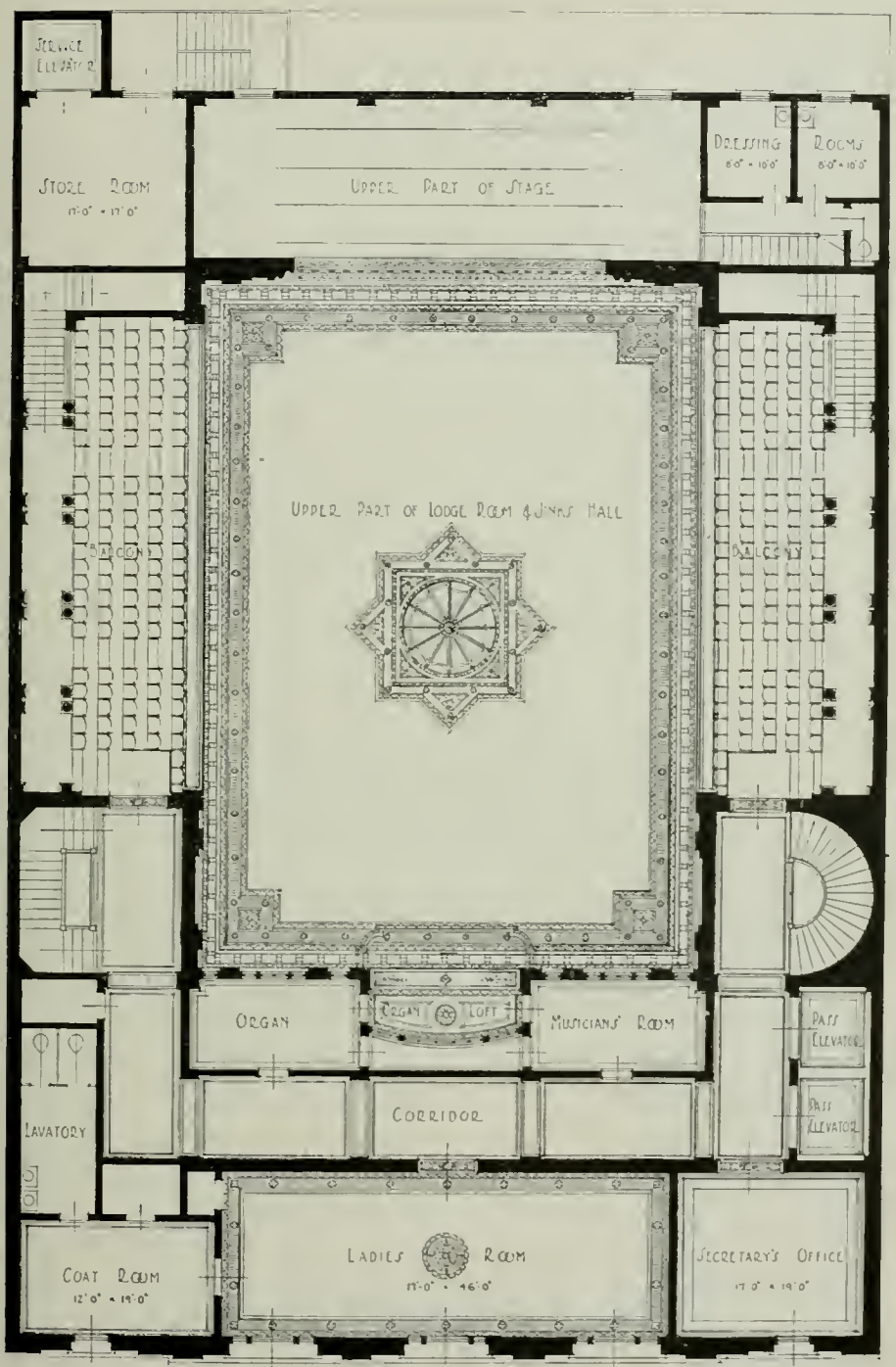
ELKS CLUB BUILDING, SAN FRANCISCO
F. H. MEYER & A. R. JOHNSON, ARCHITECTS



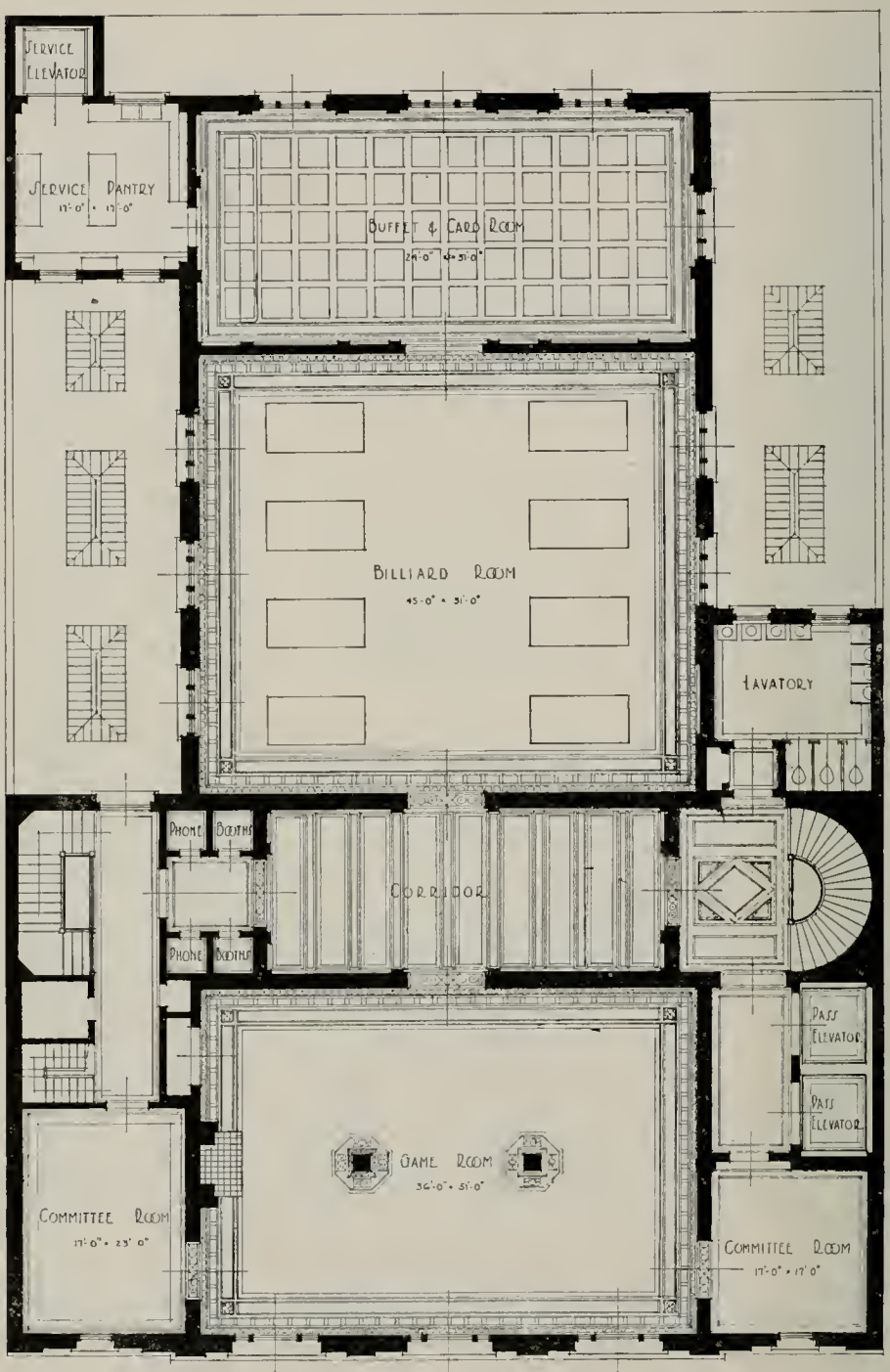
ELKS CLUB BUILDING, SAN FRANCISCO
F. H. MEYER & A. R. JOHNSON, ARCHITECTS



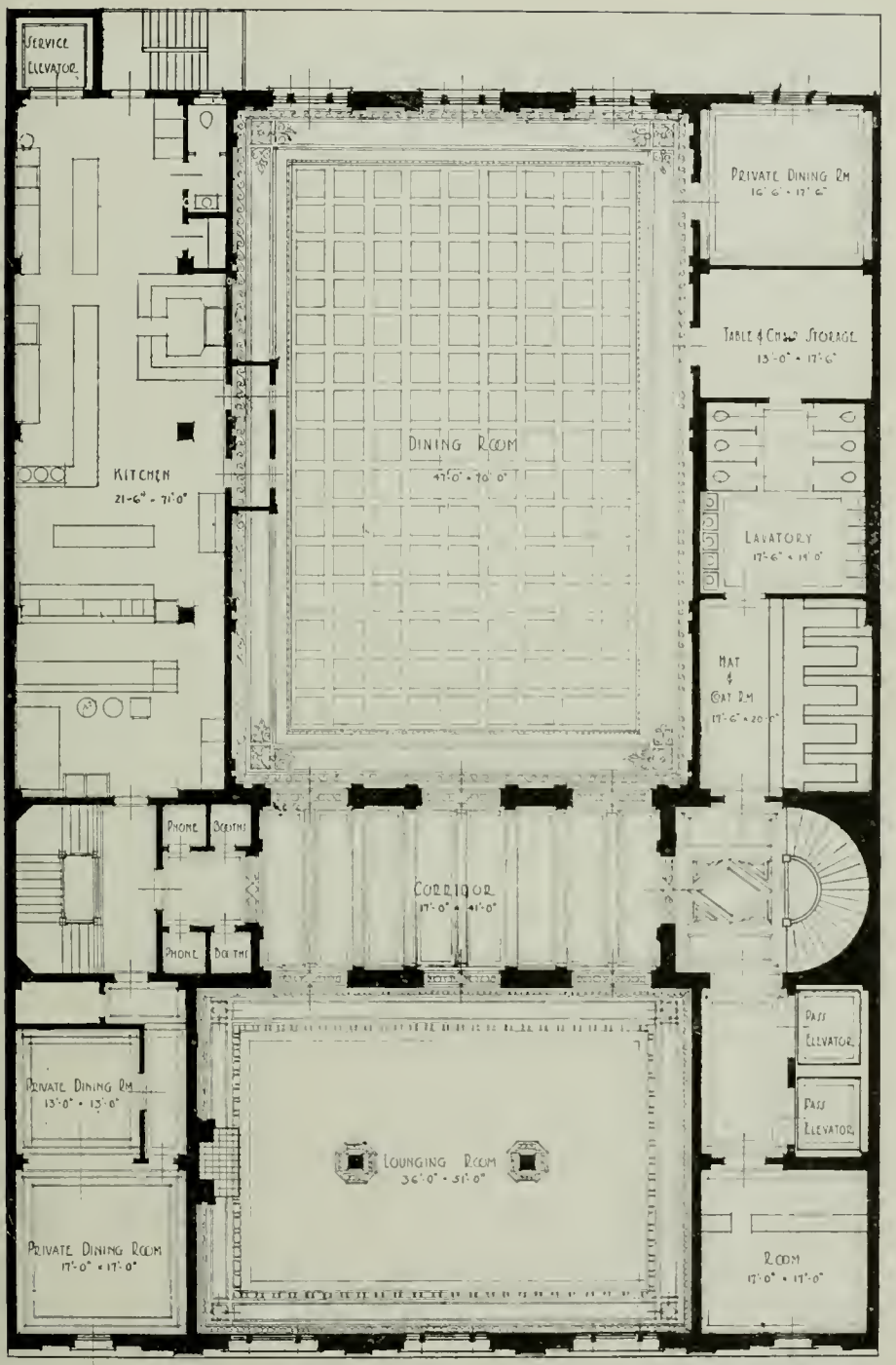
ELKS CLUB BUILDING, SAN FRANCISCO
F. H. MEYER & A. R. JOHNSON, ARCHITECTS



ELKS CLUB BUILDING, SAN FRANCISCO
F. H. MEYER & A. R. JOHNSON, ARCHITECTS



ELKS CLUB BUILDING, SAN FRANCISCO
F. H. MEYER & A. R. JOHNSON, ARCHITECTS



ELKS CLUB BUILDING, SAN FRANCISCO
F. H. MEYER & A. R. JOHNSON, ARCHITECTS

INTERIOR, ELKS CLUB BUILDING, SAN FRANCISCO
F. H. Meyer & A. R. Johnson, Architects

Unique Municipal Fireplace

The Park Department of the city of Berkeley, California, has recently completed another large open-air stone fireplace. This is the latest addition to the series of beautiful and serviceable fireplaces being built in the various parks of Berkeley, from the plans and specifications prepared by Professor J. W. Gregg, member of the American Society of Landscape Architects and of the University of California.

The fireplace is built out of a rich brown honeycombed volcanic rock found scattered over the surface of the Berkeley hills, and when used in an uncut state in the construction of park features, it produces an extremely attractive effect. These open-air fire-places here in the Bay District, particularly in the City of Berkeley, are becoming not only highly desirable aesthetic elements in park design, but serve a most practical purpose, and are being copied extensively elsewhere in California, and even in other nearby States.

New California State Housing Act

An Explanatory Review of Its Provisions and Commentary on the Importance of Building Regulations

By MARK C. COHN*

THE significance of housing and building legislation is not generally understood by the lay public. In fact few professional architects engineers and builders evince more than passive interest in building regulations until a particular project is affected adversely. Likewise property owners and manufacturers of building materials often underestimate the relative importance of building codes. Yet, housing and building regulations are more voluminous and contain more written commandments than codes and ordinances for other subjects. This legislation is of a highly scientific and technical character. The scope of building laws includes everything from the construction of fences, sign boards and chicken coops to the most magnificent modern skyscrapers. Practically ninety per cent of everything that goes into building is governed by some state law or local ordinance; and the other ten percent is permissive only in the absence of legislation to the contrary.

The potentiality and destiny of municipalities are governed by building, city planning, zoning, fire districting and housing ordinances. This sort of legislation is the foundation for the building of cities. Uses of properties, stabilization of values, and the building business, are not only affected but are more or less dependent on such enactments.

The building business in its broadest aspects is perhaps the largest industry in the West. Progressive building material manufacturers and dealers should awaken to the need for a more active interest in building regulations enacted by municipalities and states; they should realize that errors or omissions in building regulations might seriously injure or perhaps wreck their business. One simple illustration serves to emphasize the point: If a state code defining a particular type of structure should through inadvertance omit "brick" or cement products among the materials prescribed for legal use, or fail to mention an ingredient for mortar or perhaps confine the ingredients to a particular method of mixing mortar, it would prove rather embarrassing to manufacturers and dealers of the materials affected.

Space does not permit of discussing this subject at length. However, in view of the aforementioned obvious facts, the prevalent indifference to drafting of building regulations is really astonishing. Too frequently building regulations are drafted in a haphazard manner by persons who do not possess the requisite knowledge, vision, ability or practical experience to undertake a work that essentially requires and justifies the employment of services that can be rendered only by highly trained specialists.

A comparison of building codes for different cities—communities separated by mere imaginary lines—shows conspicuous differences in requirements for assumed live and dead loads, allowable stresses for steel and reinforced concrete, thickness of walls, installation of plumbing, lathing and plastering, height limits and provisions for stairways and fire escapes. It is not to be denied that minor deviations and provisions are justifiable and necessary to take care of local problems peculiar to one or another particular community. However, fundamentals

*Expert consultant on housing and building regulations, Executive Director, California Housing and Building Institute.

of engineering and construction are determined scientifically. Standard practice has established facts that should be adhered to in the codes of the different cities. Other uniform requirements can be readily established. Moreover, modern types of construction and uses of materials approved by recognized agencies, in some instances are not prescribed for in city ordinances. Also, it is not infrequent that ordinances contain requirements that have become obsolete by the evolution of building practice and modern scientific research.

The gigantic fire losses make for a constant drain on resources and a gruesome record of human life sacrificed. Surely this aspect of the matter is enough to arrest attention of the building fraternity and particularly public officials. The National Board of Fire Underwriters points out that fires are largely preventable; and that many of the causes therefor are strictly preventable. It is a significant fact that a more general use of a few inexpensive building materials approved by the Underwriters would greatly eliminate causes for fires and conflagrations.

Impractical and obsolete building requirements make for vexatious controversies, retard improvements and cause wasteful costs. The essentiality of a regulation should be somewhat commensurate with the cost entailed to property owners. Otherwise capital is diverted to more profitable channels. These things are entirely too harmful and unprofitable to the building industry; they merit consideration.

The modifications and new provisions contained in the new housing act are of particular importance to property owners, architects, engineers, public officials, building contractors and other interests connected with the building industry.

However, this article covers only the more important changes. The California Housing Handbook, published under the direction of the Pacific Coast Building Officials Conference, is a comprehensive work that contains the text of the new law annotated; completely indexed by paragraphs; and with illustrations, forms, specifications, handy tables and cross-references that should prove helpful to the layman and the technician.

The State Housing Act, effective August 17, 1923, supercedes all state laws regulating the construction and maintenance of tenement houses, apartments, hotels, and dwellings. This law repeals every city ordinance or provision thereof inconsistent with the state act. The more stringent provisions in city ordinances remain effective. The scope of this law is statewide, including cities and towns, with the exception that the provisions for dwellings apply only to incorporated cities and towns.

In the new law all provisions are grouped and arranged in logical sequence; the enforcement provisions are definite without conflict of authority. Permit and certificate requirements, filing of plans, etc., are made easier with unnecessary red tape omitted. Affidavits on building permit applications are no longer required.

Definitions in the act are made clear and in accordance with standard practice. The definition of the word "approved" empowers local officials to approve the use of new materials, appliances and modes of construction, so that unforseen contingencies might be met intelligently. Local officials, however, are guided by standard practice because the law recognizes the National Board of Fire Underwriters and the Underwriters' Laboratories as supreme authority for the approval of such materials.

Considerable annoyance and confusion has existed heretofore with reference to the definitions of "dwelling," "apartment house," "occupied area," "yards," and projections into courts and yards, and the construction of porches through which windows open. The new act removes all ambiguity and makes clear the meaning of these provisions. Also a new provision allows bay windows to project into unoccupied areas.

Lathing provisions in semifireproof buildings of not more than 4 stories differentiate from the requirements in a building of greater height. Such a building exceeding 4 stories is required to be metal lathed throughout. In semifireproof buildings not exceeding 4 stories, only the walls, partitions and ceilings of hallways and passageways, soffits of stairways, stairwells, ceilings of basements and cellars and the enclosing walls of shafts and courts must be metal lathed.

The new state act does not permit plasterboard as a substitute for metal lath and plaster to the extent heretofore permitted. In the former housing acts, plasterboard was mentioned wherever metal lath was mentioned. The new act mentions plasterboard only in the section of definitions. Metal lath only is specified for certain portions of buildings and only masonry may be used in lieu thereof. The context of the act in some cases permits plasterboard and in other cases does not allow plasterboard as a substitute for metal lath and plaster. Moreover where plasterboard is a possible substitute for metal lath and plaster, plasterboard must be of an approved type tested as to its fire resisting qualities in accordance with the state act; contain at least 75 per cent non-inflammable materials, be not less than three-eighths inch thick and have a mechanical key bond on the face thereof. Plasterboard used on the exterior sides of walls and partitions, where permitted by the law as a substitute for metal lath and plaster, must be reinforced with metal lath or with a wire mesh reinforcement. The wire mesh must be redipped or galvanized and of not less than eighteen gauge. Plasterboard must be plastered not less than three-eighths inch thick in a thorough workmanlike manner.

A new section fixes floor loads at 40 pounds and roof loads at 20 pounds; gives timber details and sizes of floor joists, studding, bridging, fire stops, etc. Metal lath back-plastered construction without wood sheathing is recognized by the new state act. Reports on tests for this type of construction indicate it develops greater rigidity and compressive strength than plaster stucco on wood sheathing. Cement tile and blocks, and machine made glazed cement pipe for sewer connections, are among materials specified in the new law and which were not mentioned in the former acts.

Changes in requirements for rear buildings and the definition of rear lots make it possible to improve properties heretofore practically outlawed. Where a building is erected behind another structure, there must be provided an unoccupied space at least ten feet wide extending from the rear building to the street. This unoccupied space is increased two feet in width for every story the building exceeds two stories. Dwellings and flats not exceeding two stories in height may be provided with access to a rear alley not less than ten feet wide.

Height limits for fireproof buildings, including reinforced concrete buildings, are removed altogether, and only local regulations govern. Semifireproof buildings are limited to six stories and basement. Semifireproof buildings are also limited to two times instead of 1½

times the width of the street they abut. However, these buildings may exceed the two times width of street limitation, provided the fixed number of stories is not exceeded, and provided that stories above the two time width limitation are set back six feet from the facade of the story immediately below.

The height limits for wooden buildings are materially changed. The new law permits a wooden building 50 feet in height measured to the lowest point of the finished ceiling of the topmost story. However, a wooden building is limited to three stories designed for living and sleeping purposes. Basements may have a ceiling height of 8 feet above the adjoining sidewalk or ground levels. These changes eliminate the constant source of complaint that has existed heretofore as regards the construction of garages, and take care of sloping or hillside properties.

Court and yard provisions have been simplified and made practical; proper differentiation has been made as between apartments and flats and hotels and dwellings instead of applying similar requirements to these different types of building.

Outer court sizes for apartment houses are reduced as follows: Four stories from 5½ to 5 feet; six stories from 8 to 7 feet; seven stories from 10 to 8 feet; eight stories from 12 to 9 feet; nine stories from 13 to 10 feet; ten stories from 14 to 11 feet; eleven stories from 14 to 12 feet; twelve stories from 14 to 13 feet. For apartment houses of fourteen or more stories, the sizes of outer courts are increased one foot; and the maximum length for outer courts of two stories is unlimited.

Outer courts for hotels are no longer governed as to size by limitation of maximum lengths. The sizes of outer courts for hotels are reduced as follows: Four stories from 5 feet 6 inches to 5 feet; six stories from 8 to 7 feet; seven stories from 10 to 8 feet; eight stories from 12 to 8 feet; nine stories from 13 to 8 feet; ten stories from 14 to 8 feet.

The sizes and areas for inner lot line courts in apartment houses are reduced as follows: Six stories from 16 to 12 feet; seven stories from 20 to 15 feet; eight or more stories from 24 to 18 feet. The areas for inner courts are reduced for apartments of two stories from 75 to 60 square feet; five stories from 250 to 225 square feet; six stories from 400 to 360 square feet; seven stories from 625 to 525 square feet; eight or more stories from 840 to 630 square feet.

Likewise, the inner courts and inner lot line courts for hotels have been materially changed. All requirements for minimum areas of courts are omitted. The minimum areas heretofore required were from 75 to 840 square feet. In lieu of minimum area requirements, there have been fixed minimum lengths for inner courts. In the case of inner courts for hotels the reductions are as follows: Two stories, 6 to 5 feet; five stories, 12 to 10 feet; six stories, 16 to 12 feet; seven stories, 20 to 14 feet; eight or more stories, 24 to 16 feet; and inner lot line courts for hotels are reduced as follows: Two stories from 5 to 4 feet; three stories from 6 to 5 feet; four stories from 7 to 6 feet; five stories from 9 to 7 feet; six stories from 16 to 8 feet; seven stories from 20 to 9 feet; eight or more stories from 24 to 10 feet.

Intakes to courts required under the old laws were from one of 19½ square feet to two or more of from 40 to 60 square feet. The new law requires but one intake of 19½ square feet, and if the intake stops at the second floor line it may be reduced to an aggregate area of 10 square feet for apartment houses; hotels require but 5 square feet of

intake; and the aggregate area of intakes may be divided up into smaller areas of not less than 12 inches.

Under certain conditions rooms in hotels may be of 70 square feet floor area instead of 90 square feet heretofore required; and in dwellings only the minimum size of sleeping rooms is fixed at 80 square feet instead of 90 square feet for all rooms. Open sleeping porches are made possible where they were practically prohibited.

Changes for ceiling heights, room widths and alcoves facilitate design of buildings. The new law fixes window area provisions on an aggregate of the opening area instead of arbitrary fixed sizes. This change makes possible proper architectural treatment. Windows opening through porches are made lawful provided that the porches abut on a street, court or yard.

The provisions for hallways and offsets therefrom are changed to permit an offset from a hallway of three times instead of one and one-half times the width of public hallway before the offset becomes a separate hallway. Skylight provisions will not apply to two-story buildings that contain but three apartments. Some unnecessary hallway provisions should have been entirely omitted.

Water-closet and plumbing provisions remain practically the same with the exception that local officials are delegated certain discretionary powers in existing buildings when it is impractical to fully comply because of structural reasons.

The new stairway provisions eliminate the arbitrary requirement for two or more stairways in a building regardless of how small it may be and regardless of how many fire escapes it may have thereon. Stairways not required by law must be at least thirty inches wide. Special provisions apply to enclosed stairways, in fireproof hotels, that terminate at the second floor, provided they terminate in a fireproof passageway that leads directly to the street and is provided with a counterbalanced ladder that reaches the ground level.

Fire escape provisions allow greater floor areas per fire escape. Furthermore, in a fireproof building, the arbitrary provisions requiring fire escapes on the street front have been amended and fire escapes may be located so as to best serve the purpose intended consistent with the design of the building. The construction of fire and smoke towers and combined enclosed stairways are made more practical.

The construction features for elevator, vent and other shafts, inner court walls; and the construction of boiler rooms and garages are rewritten. Open lot line vent shaft widths are reduced from four to two feet. Likewise, vent shaft areas for hotels and apartments are reduced. Windows from sleeping rooms and kitchens cannot open onto vent shafts.

The provisions for exhaust draft ventilation in hotels and apartment houses permit of all approved systems. Public hallways in fireproof hotels may be ventilated by exhaust draft in lieu of windows.

In apartment houses hereafter erected it will be unlawful to use any portion thereof for a public automobile garage, repair or machine shop, automobile sales room and many other similar businesses connected with the automotive industry. In hotel buildings these businesses are not prohibitive, but the rooms must conform to certain requirements.

Any room that contains 500 cubic feet of air space may be occupied by one person. For two persons the room must contain at least

630 cubic feet; for three persons 1130 cubic feet and an additional 500 cubic feet for each additional person sleeping in the room. The smaller cubic contents take care of attic rooms and rooms with sloping ceilings.

Other provisions make clear the repuirements for a combined apartment house and hotel; and eliminate the need for permits of occupancy in existing apartment houses that accommodate no more than four families. Basements and cellars are no longer defined "stories." And as a finale, insofar as the legal designation is concerned, "tenement houses" are banished in California. These buildings will be known by the less inelegant name of "apartment houses;" and "flats" are also apartment houses.

* * *

Apprentices and Craftsmanship

"Increase the number of apprentices in the building crafts and give recognition to real craftsmanship," was the keynote of remarks made by Mr. D. Knickerbacker Boyd at the 56th Annual Convention of the American Institutes of Architects in Washington, D. C. It is true that while building itself has greatly increased in the last ten years, excepting the period following the War, the number of workers in the building trades has constantly decreased. The difficulty seems to be, according to Mr. Boyd, simply that boys are not sufficiently interested in the crafts, in achieving something definite and dignified with their hands. It is up to construction groups, the public and architects to remedy this condition. Publicity, and recognition by designers of the artistic and skillful working out of their sometimes vaguely specified creative ideas, are the necessary elements. If the journeyman of the present generation is encouraged and his efforts are appreciated by the architect and public recognition, then he will urge his son and his nephew and the boy next door to train for a craft. What would become of the best of plans without good "workers on the job"? In the book descriptive of materials used in the "model home" built for the Palace of Progress exposition in Philadelphia, recognition was given to the workmen—bricklayers, mortar mixers and hod carriers. In appreciation the men, who had been working day and night for two weeks—refused pay for overtime or night work: their efforts to please the public were being recognized. Mr. Boyd urged that architects everywhere individually put in the encouraging word that will be another drop in raising the level of the standard of craftsmanship.

* * * *

Stone Turf Houses

A new building material is now being used to a considerable extent in German Silesia, says an exchange. This consists of stone-turf. Strips of turf are arranged within a wooden framework and solidified by means of cement and chalk. The turf is hardened into a sort of stone, a four-centimeter plate of this material being tougher than a brick wall. The new building material has the advantage that much less wood moulding is required than in the case of concrete, and the stone-turf is superior in insulating qualities against heat and damp. Stone-turf houses are 40 per cent cheaper than those built of any other material.

OLD HOUSE IN THE SCHWARZWALD (BLACK FOREST)

Highways and Byways of the Central Empires

From the Wanderer's Notebook

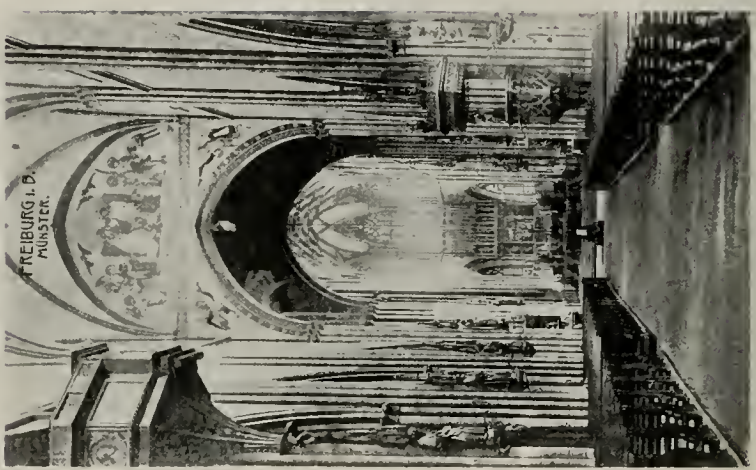
To Reddick H. Bickel and Santiago Medina, the comrades of these wanderings.

By E. N. KIERULFF, R. S. M.

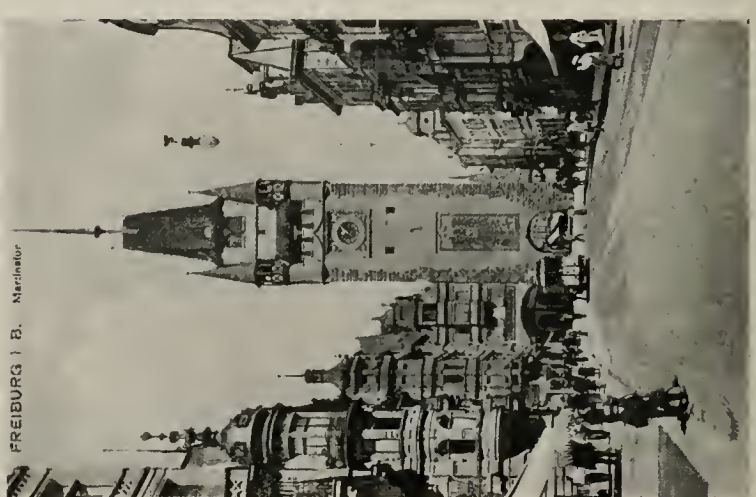
THOUGH this may be, at most, only jottings from diaries and field notes, it may help me to paint some little word pictures, or better, some crude sketches of roads seldom traveled, towns little visited, and the quaint scenes of interior country life lived by those only who really know it—the natives themselves.

From Freiburg, the quaint university town, so old, yet so clean and orderly, nestling at the foot of the blue mountains whose timbered slopes form two-thirds of that forest, famous in our childhood fairy tales and legends—The Black Forest—to Ulm, lying in the broadening Danube Valley, one traverses a countryside filled with rare charm; hills and valleys, forest and stream, farms and red roofed towns. In both Freiburg and Ulm, there are buildings and towers, walls and churches of long ago that lend the air of charm, of age, of color, to places teeming with people and commerce. The cathedrals of these two towns are ranked among the finest in Germany and claim their place also among those of all Europe. Pure Gothic in type, with slender lace-like spires, dim, solemn, lofty interiors, lit by stained glass windows as delicate as flowers, they hold the gaze and admiration of whomsoever the person may be who beholds them.

Side roads that wander and straggle through the valley bring one to and through a number of little villages, some mere clusters of old houses with colored walls and many paned windows, others, busy marts, each laying claim to some bit of old beauty—here a castle, there an old fortress, a Romanesque or a Gothic church, holding within its walls treasures that never tire, pictures that never bore.



INTERIOR, CATHEDRAL, FREIBURG-BADEN



OLD TOWN GATE, FREIBURG-BADEN

And at last, dipping over two or three ranges of high hills, one enters another valley, leaves the Danube behind and comes at length to Munich, one of the charming old cities of central Europe; combining a city of huming activity with an art center of the world; but I shall say little here, for Munich is too well known and lies in the beaten track; and this purposes only to deal with the byways—the out of the way places that lie between the well traveled ways.

Journeying southward from Augsburg as we were, by bicycle across the Bavarian Plain, it was late afternoon before, through the haze, we saw the great bulk of the mountains, caught the gleam of snow high up on the jagged peaks, and saw the sun glinting purple and bronze on the lower slopes. It was evening when we began the ascent of these slopes so we rested at a tiny village of a dozen houses and in the morning pushed on and winning to the top of a crest, zig-zagged down into a green valley, shut in by the mountains, and followed a winding narrow river of clear blue, so like our California streams that it brought a pang to my heart and a hundred pictures of my own land so far away. A village, all color, all charm, where a simply, kindly folk enact, once every ten years, the scenes of Christ's passion, a village little known, yet world famous. A peaceful, restful, sun-bathed place in which to walk, and dream and idle away whole days, except when now and again dark, forbidding clouds come down from the peaks and thunder roars and echoes while the valley is lit with sheets of hissing lightening.

Up and up the road leads, then down some long smooth grade, into another valley, a cluster of buildings, cobbled streets, and wooden houses with gabled roofs and narrow windows, great doorways and carved wooden balconies; many of the houses are half wood, half plaster, and scenes life-size from the Old Testament are painted in vivid colors on the walls, giving to a street of these dwellings a truly colorful effect not at all displeasing.

Late on a soft fall afternoon at Mittenwald, deep in the mountains, we leave Germany and are coasting along a white road straight towards a gaunt range and straight into Austria. We start to climb through long pine clad slopes, fragrant with moss and needles. The shadows deepen; behind us we catch glimpses of the road stretching back to the valley; ahead it spirals always upwards. The air is still and very soft; like a rare old wine it brings fragrance and bouquet, and that subtle something that breathes of high places, untrammled, unsullied, the mystery that lies in all mountains the world over. When at last we reach the summit or the "high point" as it is called, we find a village, a very small one;—no, they cannot put us up for the night; they are sorry, there are but two inns and both are full, but we can have dinner, of that we may be sure—so we wash and rest and smoke, and later fare well enough on simple, well cooked food, and in the mauve and pink glow of a late twilight we push on and start down a gentle grade over a white sanded road that shortly before dark becomes the steepest and most terrifying grade. Brakes are of little use, so it settles into walking and is near to mid-night when we reach the bottom and put up at an inn five miles from Innsbruck. We sleep our first night in the famous Inntal—the valley of the Inn river.

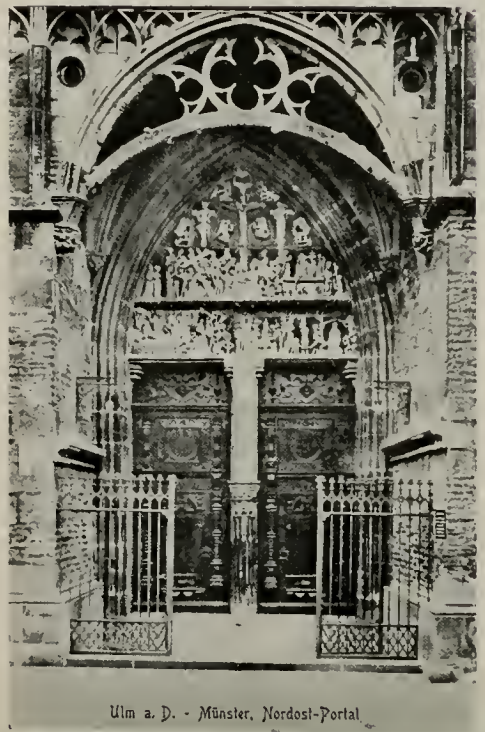
Morning comes cloudy, with a fine chill drizzle and we set out over wet roads and have but little to say. Noon time brings lunch, the parting of the clouds and, Innsbruck, and shows us the town to be a

MUNICH-RATHAUS (CITY HALL)

BEURON-HEAD OF THE DANUBE VALLEY

KALS, AUSTRIA, HIGH TYROL

GLACIER BELOW SUMMIT OF THE GROSS GLOCKNER-AUSTRIA-TYROL



NORTHEAST PORTAL OF THE ULM CATHEDRAL

INNSBRUCK--THE MARIA THERESIEN STRASSE

CLOISTER AT MEISSEN ON THE ELBE

place of rare old charm, with its bridges, towers, old palaces, and quaint streets. Wherever one looks he sees mountains—the Maria Theresien Strasse, the central thoroughfare runs north and south and seems to end bluntly against ranges of high snow clad peaks. From a height to the north of the town, reached by a funicular, there are several hotels commanding a superb view of the Inntal, Innsbruck and the surrounding Tyrol.

Leaving Innsbruck late one afternoon we pedaled over a level road eastward and at the next town found a comfortable inn and after dinner, as an almost full moon was climbing up over the ranges, we lit our lamps and for three hours had one of the most charming rides of the trip. Scattered lights gleaming from farms, the river a stream of silver, a deep, settled quiet over the countryside, the whole valley bathed in an early fall moonlight and a smooth road under our wheels.

Days have been slipping by and strange roads have been slipping away under our bicycles and today finds us resting in a little place whose name suggests loafing and resting, and in this tiny place we have found the most unique and delightful inn of the trip. Spotless linen, excelient food, clean, airy rooms and an abundance of fine old objects, carved chests, tables, several very fine canvasses in the halls, and two old armoirs of very ancient date. Our quarters command a view that draws one to the windows and holds him there in its spell. We are resting in Lofer after ten strenuous days of going, during which time we deserted the bicycles, and on foot made a long journey up over the timber line and down into a shut-in, locked-up bit of a valley and to the smallest village I've ever seen, and I still think one of the most delightfully situated. Like the town, its name is little—Kals. Shut in away from the world, miles from a railway, guarded by the great peaks of the high Tyrol, watched over by the forbidding Gross Venedeger and Gross Glockner—the Great Ventian and the Great Clockman—two of the highest and mightiest in the Tyrol. With an excellent guide we made the ascent of the Glockner in two days, spending a night at the last "Rest Hut" at the eleven thousand foot elevation and making the remaining eighteen hundred and sixty feet to the tip of the peak for a magnificent view which embraced most of the mountain systems of central Europe.

So after a needed rest at Zell am Zee by the beautiful lake and at Lofer, we have pushed on and are again in Germany; and Austria and its charms are in the past.

After long sunlit days spent in the hills and beside a lake whose waters are like Louise and Tahoe, we approach another frontier through fir-clad ranges whose softness and gentle contours are something of a relief from dizzy jagged heights and ice and snow. These Bohemian mountains will haunt me for many years. After a day of drizzling showers I saw them when at sunset the clouds were parting and long shafts of golden light were falling across them, there was a something about them, something I cannot find words to express; they were friendly but not warm, brooding but not sullen, very mysterious, very haunting. Through a gently rolling country, green and fresh, we have come to Pilsen and to Prague, old cities little known, little traveled. Prague defies description, it is filled with a charm that must be seen and felt; one must see its spires and domes rising from the bluffs along the Elbe, must know its busy streets and narrow arcaded lanes to catch the lure, the fascination of it. A white river boat beats lazily down

IN THE BOHEMIAN MOUNTAINS

REGENSBERG, BAVARIA (THE CATHEDRAL)

PORTION OF THE OLD TOWN—NURNBERG

OBERAMMERGAU FROM THE MOUNTAINS

stream and we forsake the road for the peace and quiet of the broad river whose heights and bluffs recall the shores of the Hudson.

And as the days go by we drift along again into Germany, through Dresden and Meissen, Jena and Leipsic, Bamberg and Coberg, to Regensberg and splendid, quaint old Nurnberg, and at last back to the Rhine, and in Coblenz are rested and refreshed among our own kind, see American faces and American khaki, and from the walls of the old castle see the Stars and Stripes breaking out in the sunset wind.

PRAGUE—BOHEMIA—ROYAL PALACE AND THE ELBE

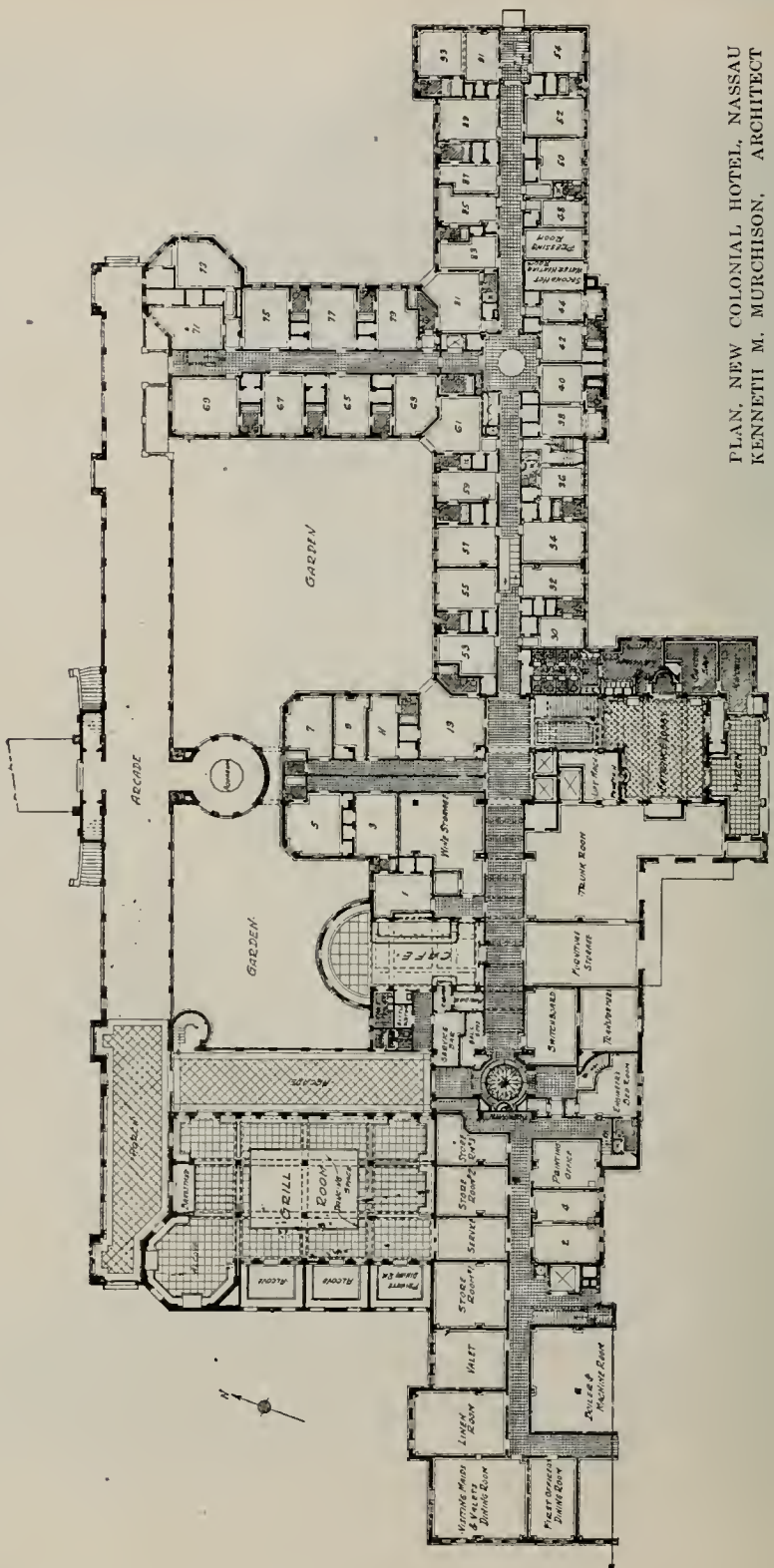
NEW COLONIAL HOTEL, NASSAU, THE BEHAMAS
KENNETH M. MURCHISON, ARCHITECT

Humor characterizes the mural decorations of the New Colonial hotel at Nassau, the Behamas. The bas-relief shows a mother "Fatuliva Bird," as described in Dr. Traprock's famous book "The Cruise of the Kawa," guarding her square eggs.

Unique Tourist Hotel

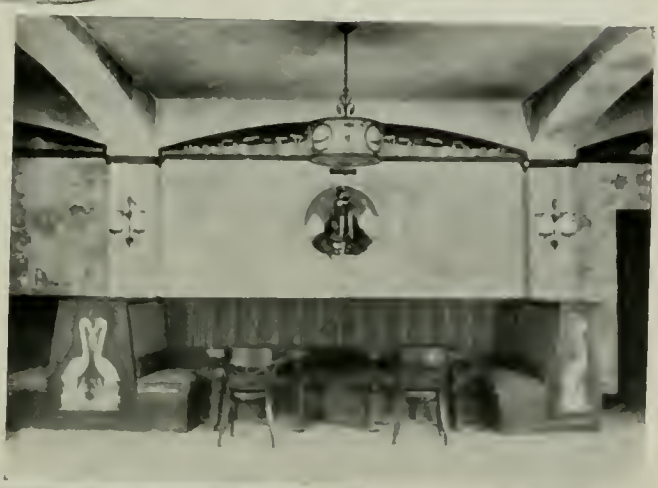
A HOTEL possessing many interesting features—a playground for the winter tourist—was recently completed at Nassau, the Behamas. The architect, Mr. Kenneth M. Murchison, has adopted a pleasing type of semi Spanish architecture which harmonizes splendidly with the tropical surroundings. The New Colonial, with its ocean frontage, was completed in March, in record time, considering the obstacles which confronted the contractors. A race riot between Cuban and Spanish workmen made it difficult to obtain dependable native labor and moreover all the construction materials had to be imported from the United States. In spite of these and other handicaps the hotel was completed in less than seven months following the destruction by fire of the old hostelry. The walls of the hotel are pink coral toned white, the windows are outlined in emerald green and the iron work in indigo blue. The roof is red Spanish tile. The mural decorations are a feature of the establishment, many of them being most unique in their conception. Photographs of some of these humorous reliefs are shown elsewhere by courtesy of Hotel Management, from which publication all the illustrations are taken. Other features of the New Colonial are roof gardens on every floor, and laticed bedroom doors which insure the best possible ventilation.

Still another unique feature is the aquarium, a circular room representing an under-sea cove. A glass shaft eight feet in diameter rests in the center of this room. This has been filled with the many rare and beautiful fish that frequent the waters of the Bahamas. It was designed by Stephen Haweis. The famous gardens of the old Colonial were only partially destroyed by fire and these grounds are still a distinctive feature of the hotel. There is an outside dancing pavilion and tea garden adjoining the tennis courts, also a yacht landing at the entrance to the grounds.



PLAN, NEW COLONIAL HOTEL, NASSAU
KENNETH M. MURCHISON, ARCHITECT

Another example of the wall decorations. This blissful scene decorates, appropriately, the bar. The bottles and corkscrew are genuine; they have been ingeniously worked into the bas-relief



An alcove in the men's grille. Edward Trumbull executed the mural decorations. Note the touch of humor—and coolness — in the walrus that occupies the oval.

Inviting scenes such as this greet the guest at every turn. The interior walls are finished in tan and gray and the floors are of stone.

Safe Chimney Construction

ACCORDING to the Actuarial Bureau of the National Board of Fire Underwriters, defective chimneys and flues are responsible for more property losses than any other of the four divisions into which heating plants are divided in the list of fire causes. Defective chimneys and flues stand third in the list of major fire causes, the list being led by electricity and matches-smoking.

In an abstract of the Bureau's report, made by the American Roofer, it is stated that during the six years from 1915 to 1920 this "strictly preventable" fire hazard was the cause of $71,037,084 worth of material wealth being destroyed. Allowing 25 per cent for unreported losses and those upon uninsured property, the total is increased to $88,796,355, which is considered a conservative estimate of the actual losses.

Bad construction is held to be the chief reason for the heavy damage from the chimney and flue hazard, although carelessness is responsible for much of the trouble. Carelessness figures in the situation when lack of cleaning causes a flue to overheat and start a fire, and when necessary repairs are neglected. Also, when unused flue holes are stopped with papers, rags, boards and other inflamable materials instead of with a metal cap securely held in place.

Statistics show that over 12 per cent of dwelling house fire losses originate from defective chimneys and flues, but the hazard is also marked in many mercantile establishments and small town factories of inferior construction. Schoolhouses, too, have suffered many chimney and flue fires.

The flue is the draft duct leading through the chimney and is connected to the stove or furnace by the smoke pipe. When flues are improperly constructed upon unsafe specifications, sooner or later fire is liable to ensue.

The reasons why chimneys are such a fruitful source of fire have been summed up as follows:

1. Use of terra cotta sewer-pipe or other unprotected tile or hollow blocks for the chimney;
2. Construction of chimney with bricks laid on edge instead of flat.
3. Chimney walls built with brick flatwise or only one brick thick, and flues unlined;
4. Supporting the chimney on the timber construction of a building or upon brackets; or insufficient masonry foundation when the chimney rests on the ground;
5. Two or more connections to the same flue.
6. Building woodwork into the wall of a chimney, or placing it in contact to its exterior;
7. Smoke-pipes arranged to enter a chimney in vertical line;
8. Carelessness in sealing connection between smoke-pipe and the chimney, and failure to anchor the pipe to the chimney;
9. Carelessness in not renewing a rusted smoke-pipe and also in allowing combustible material too near the pipe;
10. Carelessness in not keeping the chimney clean and the joints in the brickwork properly pointed.

It often happens that old or improperly constructed chimneys develop cracks in that portion passing through the attic and thus become

a continual menace. Sparks fly out into the attic, and owing to the location, a fire so started is liable to gain considerable headway before being discovered.

The combination of dilapidated chimney and a wooden shingle roof is one of the worst fire hazards that could be devised. The sparks escape through the bricks in such a chimney and find the tinder-like wooden shingles excellent fuel for quick action. Danger also lurks at the roof line when the flashing has been improperly installed or when the chimney walls are in direct contact with the roof structure.

As a general thing, protection against fire is comparatively simple and inexpensive, and this is true also as far as safeguarding chimneys and flues is concerned.

Heavy as are the losses from this hazard, it is surprising, in view of the methods of destruction prevailing in many communities, that the record is not worse than it is. In a recent defective flue fire in a Pennsylvania city, as an instance, it was found that a wooden joist ran into the flue opening, a careless building practice which is, unfortunately, only too common.

A chimney should always be solidly built upon an independent and indestructible foundation. It should never rest upon wooden construction because this will cause shrinkage and settling, with the result that the chimney is very likely to crack and permit the escape of sparks.

In some parts of the country it is a common practice to suspend a chimney from floor or roof timbers by iron hangers. This is a dangerous custom and should not be permitted.

A chimney wall should never be less than 3¾ inches thick (the width of a standard size brick) and should be lined with chimney tile. This is important, since in the absence of this lining the mortar between the bricks will eventually disintegrate and fall out under the action of heat and the gasses of combustion. For these reasons, plaster is not a satisfactory lining, as it is sure to crack and fall off in the course of time. Fire clay chimney tile, manufactured for the purpose, is the only safe material and its use adds little to the cost of construction. Excess mortar at the tile joints should be carefully removed so that the flue will present a smooth surface which will create a good draft and keep the accumulation of soot at a minimum.

Building chimneys with bricks set on edge is dangerous as it makes thin, unstable construction that soon causes the cracking of the mortar and the development of crevices between the bricks. It is considered imperative that the bricks should be laid flatwise. The practice of building woodwork into a chimney wall should never be permitted, nor should it touch the chimney, a separation of approximately two inches being necessary for safety. This applies to all floor construction, partitions, rafters, roof boards and shingles.

Where a chimney passes through a floor, the space between the floor timbers should be filled with some porous, incombustible material, such as cinders, refuse plaster or mortar, held in place by a sheet of metal nailed to the underside of the wooden beams. Neither solid mortar nor brickwork should be used to fill the space, since they will transmit heat. Gypson blocks to fit the space constitute one of the best materials for this purpose. At the roofline sheet metal flashing set into the joints of the brickwork and overlapping the roof boards, should be used.

THE
Architect and Engineer
Incorporated
Founded 1905 by E. M. C. WHITNEY
W. J. L. Kierulff - President and Manager
Fred'k W. Jones - Vice-Pres. and Editor
G. H. Oyer - - - Advertising Manager
L. B. Penhorwood - - - - Secretary
T. C. Kierulff - - - - - - - Attorney
Associate Editors
Irving F. Morrow - -Architectural Critic
Chas. H. Cheney - - - - City Planning
Chas Peter Weeks - - - - Book Reviews
Emerson Knight, Wilbur D. Cook } Landscape Architecture
Wm. B. Gester - - Inspection and Tests
O. P. Shelley, C. E., F. W. Fitzpatrick } Fireproof Construction
T. Ronneberg, C. E. - - Structural Steel
W. H. Lowe - - - - Roofs and Roofing
Fred'k N. Woods, Jr. - - Rock and Gravel
Chas. Felix Butte - Electrical Construction
J. W. Fricke - - - - School Equipment

Published Monthly in the Interest of the Architects, Structural Engineers, Contractors and the Allied Trades of the Pacific Coast by The Architect and Engineer, Inc.

PUBLICATION OFFICE:
627-629 Foxcroft Building, San Francisco
Telephone Douglas 1828

The publishers disclaim any responsibility for statements made in the advertisements of this magazine.

Terms of Subscription
(Including postage) to all parts of the United States, $2.50 per annum; to Canada 75c additional; to all Foreign points $1 additional

Vol LXXIV AUGUST, 1923 No. 2

THE NEW CALIFORNIA STATE HOUSING ACT

In this issue appears an article on the new California State Housing Act, by Mr. Mark C. Cohn that should prove of particular interest to all architects, engineers, builders and public officials; and it should arrest the attention of manufacturers and dealers of building materials. Mr. Cohn is a recognized authority on housing and building regulations, Executive Director of the California Housing and Building Institute, and a well-known engineer that has held public office in municipal, state and federal service. For more than three years Mr. Cohn has waged a state-wide campaign to get enacted practical housing legislation; and the passage of the new State Housing Act entitles him to the well deserved credit of bringing about a notable forward achievement for the allied building industry.

Better and scientifically drafted, uniform building regulations in California cities will do more than any other one thing to encourage, stabilize and put the building business on a business basis. Oppressive theoretical regulations discourage building operations and divert capital to more profitable channels. The Architect and Engineer has consistently supported the passage of the new housing act because it contains many desirable changes in the public interest.

PASSING OF THE BONUS EVIL

The eastern press has but recently discovered that building contractors are paying bonuses. Possibly the evil of paying more than the wage scale to workmen is new to the construction world east of the rockies, but it is an old story on the Pacific Coast. Los Angeles began offering bonuses when the building boom commenced there three years ago. The evil spread to San Francisco and other coast cities and for a while one could not secure a competent carpenter or plasterer without adding a bonus to his daily wage. At one time conditions were so bad that a contractor never knew from one day to the next how many, if any, men he might expect to find on the job at the beginning of a day's work. If there was another job close by he would be as likely to find the help working there as anywhere and the only way he would be able to get them back would be to offer more money. Of late every effort has been made by the solid building interests to discourage the paying of bonuses. President George, of the San Francisco Builders' Exchange, declares there is little of it being done here now and reports from Los Angeles are that the contrac-

tors are beginning to see the light and have discontinued the practice wherever possible.

The day when an owner shall be asked to pay any cost for labor and materials to get the job under way has passed, and it is gratifying to note that responsible builders have joined with the owner in this viewpoint. It is the only solution to a continuance of prosperity.

THE GARAGE BEAUTIFUL

Some day, when this country becomes submerged in and saturated with Art, there will be the garage beautiful. The time is undoubtedly coming when all the works of man will show as lovely as the works of Nature. Nature has been at it for millions of years. She knows.

We have just been looking at the picture of 'A Modern Garage' on a large scale—a public garage —in Toledo, that is a work of art. It is as comforting and inspiring to the taste as one of those centuries-old churches in rural England that artists are happy to paint.

This garage of English rustic type, 'the front of it of nature stone', in the architect's words, is an adornment to its neighborhood. Fine mansions will scarcely object to association with it—if it will only maintain a seemly quiet, which is quite possible.

It is difficult to understand why all prosaic and utilitarian structures cannot be aesthetic. Once, in journeying through Canada, we saw a chicken house with stained-glass Gothic windows. Pretty enough to live in, if it only had been larger. And years ago we encountered in Arkansas (from the car window, we hasten to add) a vine-embowered saloon; the vines all in bloom.

These instances may help to emphasize our point, that any structure meant for commonplace use can be made a picture in the landscape.

TO PROMOTE INTEREST IN APPLIED ART PRODUCTS

As the outcome on certain conferences on Industrial or Applied Arts in America, called recently by the Newark Museum Association, a committee has been named to make a systematic inquiry into what steps, if any, various organizations are taking, or should take, with reference to the promotion of interest in Applied Art Products of American factories. A letter sent out by Dr. John Colton Dana, Director of the Newark Museum, gives a clearer explanation of the movement and it is hoped that something definite and constructive will come of it. To quote:

"Skillful hands and originating minds have been coming to this country for nearly 300 years. For the purposes of this inquiry, "skillful hands" here means trained craftsmen and "originating minds" means designers of form and decoration, who are, in no small degree, inventors.

Our open door of opportunity has led many thousands of these artists and craftsmen to come to us.

Yet, we are told now, after centuries of immagination, that we sadly need in work of scores of kinds, from brick and terra cotta making to the designing of shoes, the skillful hands and originating minds which once came to us so abundantly.

The chief reasons for this are two: Our country is not now as inviting to the trained worker and the studious artist as it once was, so the one-time stream of these workers and artists has almost ceased to flow; and, as those who came have grown old and died, their places have not been taken by a native product, for the reason that the American boy drifts inevitably into more profitable things than craftsmanship and artistry.

And this leads to a question, whose answer as here given is one of the immediate incentives for this letter:

"Why do American boys turn from craftsmanship and artistry?"

Because neither pays well.

By "pay" is meant here not only a fair living wage; but also, and most particularly, that general recognition, that

unspoken title of honor, by which alone can be adequately paid those who are born to excell in fine work of hand and brain, done with tools, or with brush and pencil.

And the Inquiry which this letter carries to organizations, individuals, shops, stores, etc., is this:

Have you in your community any groups of persons, organized for whatsoever purpose, for social pleasure, for self-education, for the city's improvement, for religious development, or what not,—any organization which may be willing to say publicly that they wish to honor men of high skill of hand or good power of design?

Have you in your city organizations which would, in your opinion, make such a declaration if it were suggested to them that they do so?

To illustrate: A certain American maker of good table ware rivalled the best French potters in his products. To sell them to advantage he had to put on a name other than his own and permit them to be sold as French. This manufacturer had in his employ skillful hands, and for his designs, originating minds. He paid them fair wages. He could not get for them the recognition and the titles of honor which they deserved and needed. The blame for this condition—and a like condition is found today in a hundred crafts and trades—lies with the buying public of this country, of which the citizens of your city are a part.

We believe that the buying public can be moved to look with unbiased eyes on the products of American factories and to take pleasure and pride in the fact that those products are from skilled hands and artists' brains of men and women who have been taught in our own schools, and trained in our own studios and shops.

We are trying to do the relatively easy thing of learning what and where are the individuals and the organized groups in this country which will give a general endorsement to a movement for bringing American workmen and their associate artists into a more general recognition and for arousing a keener appreciation of their work.

The committee on preliminary inquiry includes, Margaret Coult, Head of English Department, Barringer High School, Newark, N. J.; Mr. Edgar H. Cahill, Writer on Art, New York City; Mr. Arthur F. Egner, Chairman Executive Committee, Newark Museum; and Dr. C. R. Richards, 20 West 44th Street, New York City, Director, Industrial Museum Survey.

American Institute of Architects

(ORGANIZED 1857)

San Francisco Chapter

OFFICERS FOR 1923-24

PRESIDENT ..... GEORGE W. KELHAM
VICE-PRESIDENT ..... HENRY H. MEYERS
SECRETARY-TREASURER ..... J. S. FAIRWEATHER

DIRECTORS

WILLIAM MOOSER ..... THREE YEARS
J. H. BLOHME ..... THREE YEARS
A. J. EVERS ..... TWO YEARS
HARRIS ALLEN ..... TWO YEARS
S. SCHNAITTACHER ..... ONE YEAR
MORRIS M. BRUCE ..... ONE YEAR

Oregon Chapter, Portland

PRESIDENT ..... CHARLES D JAMES
VICE-PRESIDENT ..... FOLGER JOHNSON
SECRETARY ..... WILLIAM L. SMITH
TREASURER ..... ORMOND R. BEAN

DIRECTORS

WM. C. KNIGHTON WM. G. PURCELL JOHN V. BENNES

Southern California Chapter

PRESIDENT ..... SUMNER P. HUNT
VICE-PRESIDENT ..... A. M. EDELMAN
SECRETARY ..... CHAS. F. PLUMMER
TREASURER ..... ALFRED W. REA

DIRECTORS

C. E. NOERENBERG ..... ONE YEAR
DAVID J. WITMER ..... TWO YEARS
EDWIN BERGSTROM ..... THREE YEARS

Washington State Chapter

PRESIDENT ..... CARL F. GOULD
SECRETARY ..... A. F. MENKE
TREASURER ..... CARL SIEBRAND
FIRST VICE-PRESIDENT ..... LOUIS BAEDER
SECOND VICE-PRESIDENT ..... ROY S. MASON
THIRD VICE-PRESIDENT ..... GEORGE H. KEITH

San Francisco Architectural Club

77 O'Farrell Street

PRESIDENT ..... MARK T. JORGENSEN
VICE-PRESIDENT ..... EDGAR B. HURT
SECRETARY ..... CARL R. SCHMIDTS
TREASURER ..... LAWRENCE H. KEYSER

DIRECTORS

WILLIAM ROWE FELIX RAYNAUD J. B. MCCOOL

California State Board of Architecture

Northern District

Phelan Building, San Francisco

PRESIDENT ..... CLARENCE R. WARD
SECTY. & TREAS. ..... SYLVAIN SCHNAITTACHER
233 Post Street
EDWARD GLASS JOHN J. DONOVAN JAMES R. MILLER

Southern District

Pacific Finance Bldg., Los Angeles

PRESIDENT ..... WILLIAM J. DODD
SECTY. & TREASURER ..... A. M. EDELMAN
JOHN PARKINSON MYRON HUNT W. H. WHEELER

SAN FRANCISCO PUBLIC LIBRARY

With the Architects

Building Reports and Personal Mention of Interest to the Profession

Morrow & Garren Busy

New work in the office of Morrow & Garren, Chronicle building, San Francisco, includes a foundry to be erected at Spear and Folsom streets, San Francisco, for the Great Western Smelting Company at an estimated cost of $70,000; a two-story concrete store and office building at 12th avenue and Clement street, San Francisco, to cost $30,000; and the first unit of a group of stores on West Portal avenue, San Francisco, for Mr. Milton Lees.

Oakland Apartments

Messrs. Williams & Wastell, American Bank building, have prepared plans for a $60,000 frame and brick veneer office and apartment building for Dr. M. Elgarten, of 1247 First avenue, Oakland. The building will be constructed on Broadway, near the Oakland Technical High School.

Concrete Warehouse

Architects Weeks & Day, of San Francisco, have completed plans for a five-story and basement reinforced concrete warehouse to be erected at Ninth and Brannan streets, San Francisco, for the Standard Sanitary Manufacturing Company. Building will be 180 x 100.

The same architects have also completed plans for the San Francisco Chronicle's new plant at Fifth and Mission streets, San Francisco.

Apartment House Work

Plans are being prepared by Architects Fabre & Hildebrand, French Bank building, San Francisco, for a $16,000 flat building on Chestnut street and Van Ness avenue, San Francisco, and for extensive alterations to an apartment house on Union street, near Fillmore, San Francisco.

Theatre and Office Building

Plans are being prepared by Architect Maury I. Diggs of Oakland, for an eight-story Class A theatre and office building to be erected at 19th street and Telegraph avenue, Oakland, for Senator Arthur Breed and associates. The building and equipment will cost $600,000 and construction is announced to start within sixty days.

Oakland Store and Loft Building

Architect James W. Plachek has awarded a contract to Alfred H. Vogt of San Francisco, to construct a two-story and basement reinforced concrete and terra cotta store and loft building at Eleventh and Clay streets, Oakland, for Mr. John W. Havens, Ethel Du Val and Mary Robinson, at a total cost of $95,538. This is exclusive of the glass work and elevators.

College of the Pacific Buildings

Plans for a group of academic buildings at Stockton for the College of the Pacific will be completed during the current month, according to the Supervising Architects, Messrs. Davis, Heller & Pearce of Stockton. Contractors will be asked to figure on the work early in September. Chas. T. Phillips, Consulting Engineer, is preparing the specifications for the mechanical equipment.

Class C Apartments

Plans have been completed by Architects Baumann & Jose, 251 Kearny street, San Francisco, for a $90,000 Class C apartment house to be erected on the east side of Franklin street, north of Washington, San Francisco, for Mr. L. D. Stoff. The same architects are preparing plans for a large residence in Portola Drive, San Francisco, for Dr. Henry W. Nasser.

Builders Exchange Buildings

Both the San Francisco and Oakland Builders Exchange are to have homes of their own. The former has bought the property at Minna, Fifth and Mary streets, San Francisco, while the Oakland Exchange has purchased the northwest corner of Webster and Hobart streets, Oakland. It is not announced that any architect has been employed to design the buildings for either exchange.

Marysville Hotel

Working drawings are being prepared by Mr. Edward Glass, Underwood building, San Francisco, formerly of Glass & Butner, Fresno, for a five-story store and hotel to be erected at Fifth and E streets, Marysville, Yuba county, for the Marysville Hotel Company, Incorporated.

Architects Move

The following architects, all subscribers to The Architect and Engineer, announce the removal of their offices:

Mr. John J. Roth, from Atascadero to 7060 Hollywood boulevard, Los Angeles.

Mr. R. E. Backus, from 1321 P street to 3227 Second avenue, Sacramento.

Messrs. Cyril Bennett and Fitch H. Haskell, associated, from the Kendall building to 600 Security building, Pasadena.

Mr. H. H. Whiteley, from 5205 South Western avenue to 5912 Hollywood boulevard, Los Angeles.

Mr. Richard C. Farrell, from 503 Hibernian building to 700 Western Mutual Life building, Los Angeles.

Mr. Clarence E. Decker, from Timken building, San Diego to 607 Union Bank building, Los Angeles.

Mr. Orville L. Clark, from the Brower building, Bakersfield, to 923 Chapman building, Los Angeles.

Mr. Norman W. Kelch, from 5752 10th avenue to 3602 9th avenue, Los Angeles.

Chico Architects Busy

New work in the office of Cole & Brouchoud, of Chico, includes a one-story concrete school building at Vina, to cost $35,000; a one-story concrete store building for Dr. J. O. Chiapella to cost $8000; a two-story reinforced concrete club building for the Women's Club of Red Bluff, to cost $17,000; and a two-story frame and stucco residence at Tudor, Sutter county, for Mr. W. A. Saunders to cost $30,000.

Eight-Story Building

Hale Bros. are to build an eight-story addition to their department store building at Stevenson street and Mint avenue, San Francisco. The two lower floors are to be leased to the city of San Francisco, as headquarters for the Fire Department. Plans for the building were prepared by Architect George de Colmesnil.

Personal

Architect Edgar H. Cline has resigned his position as head of the architectural department of the Los Angeles board of education. Mr. Cline has held this position for several years during which time his department has designed many of the school buildings and has supervised the erection of all schools erected by the board of education.

* * *

Architect McNeal Swasey was recently married in New York City. Mr. and Mrs. Swasey will return to Los Angeles about September 1st. The firm of Swasey & McAfee has been dissolved by mutual consent. Mr. Swasey will continue the office at 405 Hibernian building, and Mr. McAfee will practice from his residence.

The firm of Mead & Requa, architects, San Diego, has been dissolved and Mr. Requa has formed a partnership with H. L. Jackson, the new firm being known as Requa & Jackson. They have an office at 614 B street, San Diego.

* * *

Architect T. C. Kistner, 616 Pantages Theatre building, Los Angeles, announces that he has taken Mr. C. Kruegl into his firm as an associate, and that the firm will be known as T. C. Kistner & Co., Architects, with offices in Los Angeles and San Diego.

* * *

Mr. D. C. Allison of the architectural firm of Allison & Allison, and Mary Elizabeth Knapp were married on Monday, July 23. The ceremony was performed at the church of the Angels.

* * *

Architect Charles M. Hutchison has moved his offices from the Security building to suite 1123, Central building, Los Angeles.

* * *

Architect J. E. Allison and family left August 10 for a trip to their former home in Pittsburg. Mr. Allison plans to visit New York, Detroit, and other eastern cities and to return by the Canadian Pacific route in September.

* * *

Architect John C. Austin of Los Angeles has been in St. Louis to confer with head officials on plans for the new buildings to be erected at Sunset boulevard and Beaudry avenue, for St. Vincent's Hospital.

* * *

Architect H. Ryan has opened an office at 406-7-8 Lankershim building, Los Angeles. Mr. Ryan was until recently engaged in the practice of architecture at Seattle, Washington. He has license to practice architecture in Montana, Washington and Oregon, in addition to a license, recently secured, to practice in California.

* * *

Architect Lester Squiers, 410 Washington building, Los Angeles, has opened a branch office at 201 Security building. He desires catalogs and literature on building materials sent to the branch office.

A Correction

In illustrating the work of Messrs. Weeks & Day, in the July issue of The Architect & Engineer, credit for designing the Loew's State Theatre, was given to that firm. This work was carried on and completed jointly, by Messrs. Reid Bros. and Weeks & Day, under the associate name of Reid Bros.-Weeks & Day. This error, inadvertently made, is corrected at the request of Messrs. Weeks & Day.

Architect Defends School Construction

In a talk before the Twenty-third Avenue Improvement Club of Oakland, Mr. Charles W. Dickey, supervising architect of the Oakland board of education, explained in detail the construction of the Roosevelt High School and defended the building operations on the new schools, which have been the subject of criticism on the part of various groups of citizens.

Mr. Dickey declared that the Roosevelt High School, now nearing completion, was the result of much earnest effort on the part of the best experts on educational matters in Oakland, working in conjunction with the supervising architect.

"We have done our level best," he said, "to produce a convenient, complete, practical and beautiful six-year high school, and we have succeeded in everything but pleasing you.

"But we expect to succeed in that when the building is finished. If you will withhold your judgment until it is finished I am sure you will be satisfied.

"Prominent educators and school architects who have examined the plans state that it will be one of the most complete high schools of its size in the United States, and the safety of the children from fire is safely guarded."

Industrial Insurance

An amendment to the Washington State Industrial Insurance Act, which went into effect July 1, requires that no building department in any city in the state shall issue a building permit until the premium for the industrial insurance has been paid to the state department of insurance. This will mean that in most cases the permit can be issued only to the contractor after the contract has been awarded.

Tacoma Meeting

A party of about eighteen Seattle members of the Washington Chapter, A. I. A., met at the Seattle Fine Arts and embarking in automobiles, motored to Auburn, Washington, where they were joined by a similar group of Chapter members from Tacoma and as guests of the Northern Clay Company were shown through their plant by Mr. Paul S. MacMichael, president and general manager.

Annual Outing

The Washington State Chapter's annual outing was held at Bailey Peninsula at the end of the Lake Washington boulevard, Saturday afternoon, July 21. Mr. Arthur Loveless was in charge of the outing, being assisted by Mrs. Carl Siebrand, president of the Architects' Wives' Society.

California Architecture

California architecture is producing many new and beautiful solutions of the school problem, according to Mr. John J. Donovan, Oakland architect.

Mr. Donovan compares the one-story building patterned after the old Mission, with the high buildings, poorly lighted in the crowded cities of the east. He points out the possibility of having spacious grounds for play and the opportunity for properly lighting the rooms of one-story buildings with the court-yard effect.

Mr. Donovan has been commissioned to design the new Convent buildings at Belmont, to cost $600,000, also St. Elizabeth's school in Oakland, to cost $400,000 and the new Union High School group at Eureka, California.

Branch Bank

Architect Smith O'Brien of San Francisco, is drawing plans for a branch of the Humboldt Bank in the Mills building. It is proposed to fit up the corner store as a fully equipped banking room. The entire interior will be treated architecturally so as to compare favorably with other banking institutions in the vicinity. The walls will be finished with Caen stone and marble, ceiling ornamented, floor of cork tile and marble, bronze and plate glass counter screen, marble check desks, display windows of walnut, revolving doors, acoustical treatment and everything to make the branch bank efficient and up to date.

Seattle Zoning Law

After over two years of intensive study the Seattle Zoning Commission has completed its work and the city council has enacted into law the ordinance drafted by the commission with but minor amendments. The mayor has signed the ordinance and it became effective July 28.

The commission was fortunate in having Mr. Charles H. Alden as one of its members. His general knowledge of the subject and his architectural training were of inestimable value.

New Subdivision at Clear Lake

Mr. Emerson Knight, landscape architect and engineer, has completed plans for the subdivision of a tract of thirty acres on the shore of Soda Bay on Clear Lake, in Lake county, for the Soda Bay Subdivision Company. The tract is richly wooded with oaks and other native trees and the roads are laid out in sweeping curves that will enhance the vistas of all trees and the lake. The lots are generous in size for choice summer home sites.

San Francisco Architectural Club Notes

Supervisor Jas. B. McSheehy addressed the club at its August meeting on the progress made at Hetchy Hetchy. The completion of the O'Shaughnessy dam has formed a lake some twenty miles in length by three or four miles in width, where before existed only a mountain gorge through which flowed the Tuolumne river. The waters thus stored will be used as a never-ceasing contribution to our present and future power, light and water needs.

* * *

The annual prizes given by the club for Atelier work were awarded on July 20. Harry Langley was the recipient of the prize for the Projet and Lowell E. Bowen for the Analytique. The jury making the awards was composed of Messrs. Edward Fricks, Ernest Weihe, Edward Flanders, Henry Howard, and Tom B. McCool. This annual prize by the club has been very effective in creating a greater interest, and an incentive to members of the class to put their best efforts into their work.

* * *

At the directors meeting held July 26 it was decided to give a banquet September 28 to commemorate the 21st anniversary of the founding of the club. While plans are yet in process of formulation, it is proposed that all Charter members of the club who can attend shall be the honored guests of the evening, and presented with a certificate entitling them to life membership. The entertainment committee headed by Wilton Smith, are now working out the final details.

* * *

A plan is under way to form a Free Hand Drawing Class among club members, and John H. Geering has been appointed as the committee to work out the necessary details. A goodly number of signatures have already been obtained to the list of those desiring to participate.

* * *

Lawrence H. Keyser was elected treasurer for the ensuing year at the last business meeting, taking over the duties of the office so efficiently handled by John A. Peterson, during the past two years. Upon his retirement Mr. Peterson was given a warm vote of thanks by the club for his good work in its behalf.

William Rowe and J. B. McCool were elected at the same meeting to fill the places in the Board of Directors vacated by the retirement of Directors Lloyd Cole and Harold W. Weeks. The retiring directors were likewise commented for their good services while members of the Board.

The officers of the club are now as follows: President, Mark T. Jorgensen; Vice-President, Edgar B. Hurt; Secretary Carl R. Schmidts; Treasurer, Lawrence H. Keyser; Directors, Felix Raynaud, William Rowe, and John McCool.

* * *

The Paraffine Companies, Inc., have extended a very cordial invitation to the club members to pay a visit to their factories at Emeryville, where they now have one of the most modern and complete roofing plants in the world. The date will be decided upon shortly.

To Talk on Domestic Architecture at Recreation Congress

Domestic architecture with special reference to planning for the play of the children will be discussed by Mr. Mott B. Schmidt, New York architect at the Tenth National Recreation Congress at Springfield, Illinois, October 8-12, according to the Playground and Recreation Association of America under whose auspices the Congress will meet. In accepting the invitation to speak, Mr. Schmidt commented on the fact that there are many unrealized opportunities to so plan residences that space and facilities for recreation might be made available. Back yards, roofs and courts could be utilized. In many American residences there are often no exits to the back yard except through the kitchen or servants' quarters. The situation in England is better in that there are separate entrances to the back yards from the master's quarters, and consequently back yards are beautified and adapted to recreation.

Some Attractive Scholarships

The College of Architecture of the University of Michigan is to have a European scholarship, through the generosity of Mr. George G. Booth of Detroit. The scholarship will be awarded for the first time at the end of the academic year 1923-24, and will be for $1,200. The successful candidate is to be given considerable freedom in the choice of his field of work and observation abroad, and is to be selected by the architectural faculty on the basis of his total record as a student, ability in design, and fitness to do independent work abroad.

The Chicago Chapter of the American Institute of Architects has authorized establishment of two scholarships in the Atelier of the Chicago Architectural Club. These scholarships will be for the year 1923-24 and are established at a cost of $50.00 each.

Store and Office Building

Architects Walker & Eisen, Pacific Finance building, Los Angeles, have completed plans for a thirteen-story Class A store and office building to be erected on the southeast corner of Eighth and Olive streets, Los Angeles, at a cost of $700,000.

Ninety-Two Requests Received for Information Regarding Uruguay Palace Competition

Editor The Architect Engineer.
San Francisco.

Sir: The Second Pan-American Congress of Architects will meet at Santiago, Chile, September 10 to 20 of this year. The first Congress took place at Montevideo, Uruguay. Delegates from all of the American Republics will be present at the Santiago meeting. It is to be held under the auspices of the government of Chile, and the program is most comprehensive. We will have an English translation made of this program and forwarded to you within a few days.

The Executive Committee of the American Institute of Architects has decided to send notices to its members, calling attention to this important Congress, and suggesting that they visit South America and represent their organization. The Congress will meet in September, the spring in Latin America, which is a most attractive season. The steamer companies are quoting a round trip ticket from New York—via the Panama Canal, west coast, Trans-Andean Railway and the east coast lines—for the sum of $630. This entire trip could be made in sixty days, permitting of a stop at Lima, Peru, ten days in Santiago, an equal time in Buenos Aires, Argentina, and stops at Montevideo, Uruguay, and Santos and Rio de Janeiro, Brazil.

The competition for the new Municipal Palace to be erected in Montevideo, Uruguay, a notice of which was published in your magazine, brought forth ninety-two requests for detailed information, photographs, etc. While many of the applicants for the data have since advised us that the rules governing the contest are different from those in vogue in this country, and that it will be most inconvenient for American architects to actively compete, some fifteen or twenty seem to be engaged in the preparation of plans for submission. As we advised you in a previous letter the date for receiving these plans has been extended to September 8, 1923, at 3 p. m.

We would appreciate any publicity you may give to this Santiago Congress in your forthcoming issue.

Very truly yours,
Franklin Adams, Counselor.

Hillsborough Residence

Architects Alfred Kuhn and Thomas M. Edwards, have completed plans for a $20,000 residence in Hillsborough, San Mateo county, for Mr. A. S. Lamond, of 463 17th avenue, San Francisco.

Oakland Shop Buildings

Plans are being prepared by Mr. Clay N. Burrell, American Bank building, Oakland, for a three-story steel and hollow tile shop building to contain twenty-three small stores or shops for women's novelties, on Broadway and 20th street, Oakland, for Mr. Parker and associates. Mr. Burrell is also designing twenty stores and a moving picture theater on Santa Clara avenue, near Grand avenue, Oakland, estimated to cost $300,000.

Garage and Machine Shop

Architect A. W. Smith of Oakland, has prepared plans for a one-story steel and brick garage to be erected at Eighth avenue and East 12th street, Oakland, for Mr. H. McCoy at a cost of $30,000, and for a one-story concrete machine shop at East 12th street and 19th avenue, Oakland, for the Gantz Machine and Tool Works.

Opening Bids In Public

It is highly desirable for architects, if possible, to have the bids for a building opened in the presence of the bidders. There is much more satisfaction to all parties concerned if this method of procedure is followed. The contractors are all satisfied then.

—Washington State Architect.

Auto Stage Depot

G. P. W. Jensen, 320 Market street, San Francisco, has been awarded a contract to construct a one-story concrete auto stage depot, office and repair shop extending from Market to Myrtle streets, near 20th, Oakland, for $100,000. J. R. Miller, San Francisco, is the architect.

Six-Story Apartment House

Architect C. O. Clausen, Hearst building, San Francisco, has completed plans for a six-story reinforced concrete apartment house to be erected on the north side of Sutter street, west of Hyde, San Francisco. Mr. Louis Blum is the owner and the estimated cost is $150,000.

Class A Hotel

Plans have been prepared by Messrs. Arthur G. Lindley and Chas. Selkirk, associated, American Bank building, Los Angeles, for a five-story Class A hotel and apartment building in Glendale, for the Ambrosini Hotel Company.

Architects Invited to Compete

The San Rafael Board of Education has appointed Messrs. Shea & Shea, architects, to design the proposed new $300,000 high school building.

Relationship Between Contracting and Engineering

By W. A. SIMPSON*

THERE was recently published in a Los Angeles trade journal an article by Mr. Godfrey Edwards stating that contracting was a business and not a profession. The tone of the whole article implied that contracting had no direct relationship with engineering.

Feeling, as I do, that the contracting business is undergoing a radical change, and is rapidly ascending to the position it rightfully deserves, I cannot refrain from answering Mr. Edwards, setting forth my ideas as to the relationship between contracting and engineering.

When anyone attempts to logically and practically reason out what is meant by a contractor many questions arise in his mind, and these must be answered before an ultimate conclusion can be reached.

In order that my argument can be more easily understood, permit me to ask several questions and then answer them, basing the answers upon my own experience.

1. Has the contracting business in the past been all we could have desired? If not, why not?

2. Is the ability to purchase and hire, as stated by Mr. Edwards, all that is necessary to make a contractor responsible?

3. Is a basic knowledge of the fundamentals of design and engineering necessary or desirable for a responsible contractor?

4. Does the public respect contractors because they have held to their own selfish motives and offered no service other than that demanded of them by plans and specifications; or does it prefer that the contractor be responsible in the true meaning of the word and not do anything which works against the best interests of all concerned?

5. Is it true that we rarely see an engineer who is a good business man?

6. Is a contractor who takes work on a fee basis a salesman and broker only? Is he not in a position to offer the same service as the contractor who operates on the lump sum basis?

It is hardly necessary to answer the first part of the first question, as everyone connected with the business industry knows that, taken as a whole, it has been a failure. A small percentage of contractors have made a success, but the majority have failed because they were either incapable or were entirely ignorant of what was expected of them, and failed to develop their business along the proper lines. The industry, therefore, has earned and won very little respect. The men making up the personnel of contracting firms have been pictured everything but high-class business men.

Up to the present time the architectural profession has not given contractors the recognition they would like. Why?

The contractors of past years have, in the majority of cases, come up from the trades where they had practical training with the tools, but no technical or business training. They had only one thought, the "survival of the fittest." Suspicion and secretiveness were in vogue. They refused to co-operate with others and could only see one side of matters in question. Taking advantage of one another was common practice.

After years of such practice the contractors found themselves in anything but a desirable position, and wondered why.

During the past ten years there has been noticed a marked change in the personnel of contracting organizations.

These men in many instances are now technically trained men who recognize the needs of better relationship between the various people interested in the building industry, and realize that the old selfish secretive methods must go. They are men who also realize that to be responsible contractors they must have an intimate knowledge of everything appertaining to construction, as they must be in a position to offer some service in every branch of the industry.

It is true that to be a successful contractor one must be a dependable business man, but we must bear in mind only partial success can be accomplished by knowing how to handle labor and where to find the right markets in which to buy materials. Success can not be registered entirely by the profits. Services rendered and reputation established must be given just consideration.

Confidence in the industry must be promoted so each and every contractor will be considered an expert in construction.

The owner demands that the contractor shall have keen judgment and vision, and be not only a contractor, but also a constructor, and he can not be a constructor unless he knows intimately the principals upon which construction is based and gives the proper people the benefit of his knowledge.

In answering the third question, I would like to ask: "If you were planning to take an automobile trip across the country, would you prefer the driver to be a man who understands the mechanism of the car, or one who only knew how to drive, and trusted in Providence that the man who last put it in order knew how?" If you were desiring to let a contract,

*William Simpson Construction Company, Los Angeles.

would you not prefer to have a firm who was capable of checking at least in a rough way all that the designers had planned? If everyone insisted upon this kind of service which is rightfully theirs, we would hear no more complaints about the contractors not having proper respect shown them. If certain requisites are made mandatory to contracting, those wishing to engage in the business will comply with them.

In my opinion one of the chief reasons for the general betterment of contractors and contracting conditions is the influx into the ranks by technically trained men who have entered because of the greater remuneration. The engineering schools of our country are today turning out the contractors of tomorrow.

When we all realize that the contractor must know something of engineering, the failures such as occurred on a Long Beach church two years ago and on the theater in Washington last year, will not be repeated under similar circumstances. How can contractors say that they are responsible and allow such serious faults in construction to escape their notice?

Is there anyone connected with the construction industry in a better position to protect lives and property from inadequate design than the contractor? It is his duty to assume the responsibility and to see that all work in his charge has been properly designed, and if this has not been done to see that it is attended to or the work stopped.

Is it not better to be able to make your own tests, surveys, and investigations and get it at first hand, if the need arises?

It is not difficult to answer my fourth question, as we all must realize that just as soon as we recognize the mistakes made by the men who have gone before us and assume the trust and obligations society intends we should carry, we will get what is rightfully ours.

It may be possible that men who have spent the greater part of their lives dealing in theory and technical matters are not always practical men. This is due to the fact that they have not developed their practical senses and not because they have none. Let men who are technically trained develop along practical lines and you have the best possible combination for the construction business.

A contractor who has an efficient organization and offers the full service of this organization, both from an engineering and contracting standpoint, can satisfactorily serve the owers' interests irrespective of whether he has the work on a fee basis or on a lump contract.

We should realize that ability will sell itself if put in the proper light. Whether the contractor is compensated by a fee or in any other way is a secondary consideration.

Realizing that thought on this subject will be beneficial to all, I will conclude with the question, "Is there a technical side to contracting?" My answer is YES.

Moves to Larger Quarters

Three years ago the Pacific Electric Clock Co. was formed with the idea of manufacturing a complete electric clock equipment on the Coast so that proper deliveries and maintenance could be handled from here.

Since then its business has expanded to such an extent that it became necessary to seek larger quarters for their factory and the company now occupies large floor space on the 10th floor of the Aronson building at 86 Third street, San Francisco.

Mr. J. J. Estabrook, who is president and chief engineer of the Pacific Electric Clock Co., was formerly vice-president and chief engineer of the Standard Electric Time Co.

The Pacific Electric Clock Company is manufacturing a complete line of electric and program clocks for school use as well as public buildings and is particularly well-equipped to handle the engineering and manufacturing of electric tower clocks, chimes, etc. In addition to this kind of work, the company manufactures an electric self-winding time switch.

Mr. C. L. Hoffman, who was formerly secretary and sales manager of the Standard Electric Time Co. of California, has recently joined the company in the capacity of sales manager.

Higher Steel Price With Shorter Day

An increase of 15 per cent in the cost of finished steel products with the abolishing of the 12-hour day in the steel industry is estimated by Mr. Elbert H. Gary, chairman of the board of the United States Steel Corporation. The announcement followed the action of the late President Harding in making public on July 6 correspondence between himself and directors of the American Iron and Steel Institute, in which the directors pledged themselves to abolish the long day when a sufficient supply of labor was assured. The change will require 60,000 additional laborers.

Branch Bank Building

The Hibernia Savings and Loan Society of San Francisco will erect a one-story branch bank building on the northeast corner of Valencia and 22nd streets, San Francisco.

Alameda Bank Addition

Architect William Knowles is preparing plans for a two-story addition to the Citizens Bank building at Alameda.

With the Engineers

Passing of Mr. Robert W. Hunt

MR. Robert Woolston Hunt, head and founder of the nationally known inspection firm bearing his name, died July 11, just one day after the Board of Direction of the American Society of Civil Engineers had made him an honorary member of the Society. Captain Hunt was born December 9, 1838, in Fallsington, Pa., and spent several years learning the practical side of iron making in the rolling mills of John Burnish & Co., Pottsville, Pa. Later he took a course in analytical chemistry in the laboratory of Booth, Garret & Blair, upon the completion of which he entered the employ of the Cambria Iron Co., Johnstown, Pa., and for them in 1860, established the first laboratory in America as a direct part of an iron or steel organization.

In 1861 he entered the U. S. Military Service and was in command of Camp Curtain at Harrisburg Pa., with the rank of captain. Upon being mustered out of service he returned to the employ of the Cambria Iron Co. at Wyandotte, Mich., where experiments with the new Bessemer process of making steel were being conducted. He was in charge of the experimental works in 1865, and so continued for a year, when the Cambria Company called him back to Johnstown to take charge of their steel business. It was at this mill later, and largely under Mr. Hunt's direction, that the first commercial order for steel rails ever made in America was rolled.

Later he assisted in designing and building the Bessemer works at the Cambria plant, and in 1873 moved to Troy, N. Y., becoming superintendent of the Bessemer works of John A. Griswold & Co. and in 1875 he became general superintendent of the Albany & Rensselaer Iron & Steel Co. During those years of active connection with steel rail manufacture, he almost completely rebuilt the various works of this company, and also patented many details of iron and steel metallurgical processes and machinery, including, in conjunction with others, the first automatic rail mill tables.

In 1888 he removed to Chicago and established the bureau of inspection, tests and consultation, now known as the Robert W. Hunt Co.

Mr. Hunt was twice president of the American Institute of Mining and Metallurgical Engineers; past president of the American Society of Mechanical Engineers; past president of the American Society for Testing Materials and past president of the Western Society of Engineers.

In 1912 he was awarded the John Fritz Medal (for his contributions to the early development of the Bessemer process) and in June of this year he was given the Washington Award of the Western Society of Engineers in recognition of his achievement.

Official Manslaughter

Editorial in The Canadian Engineer

Failure of municipal officials to safeguard their water supply may result in civil suit for negligence, now that a California case establishes precedent for such legal action.

In June and July, 1920, there were about 150 cases of typhoid fever in Pittsburgh, California. Investigation established the fact that due to lack of a stock of liquid chlorine, the water supply from the Sacramento river was pumped into the mains for at least one day without being sterilized, and an epidemic followed. Eighteen of the typhoid victims pooled their interests and sued the city for damages, accusing the officials of neglect in failing to take reasonable precautions to purify the water supply. The plaintiffs were awarded $32,821, the largest individual amount being $12,500.

There will undoubtedly be an increasing number of successful damage suits of this nature against municipal officials and water companies. In cases where the supply is commonly known to be of a dangerous or potentially dangerous character, and where the danger has been called to official attention, it would seem that not only civil suits but even suits for criminal negligence would be well founded. Surely the official who knowingly permits a questionable water supply to be served to a community without having taken every possible step to remove danger of death from typhoid, is just as criminal in his negligence as is the reckless motor driver who is jailed for manslaughter.

$20,000 Residence

Architect L. H. Ford of Oakland has completed plans for a $20,000 residence in Oakland for Mr. Frank Girola.

Expansion

Increased demand for HAUSER REVERSIBLE WINDOW FIXTURES necessitated larger quarters and new equipment. Photograph shows our new factory and offices.

Architects are invited to visit show rooms where various models are displayed.

HAUSER WINDOW CO.

1362-1366-1370 HARRISON STREET

PHONE HEMLOCK 1062 SAN FRANCISCO, CALIF.

AEROPLANE VIEW OF TROPICO POTTERIES PLANT
GLENDALE, CALIFORNIA

Gladding, McBean & Co. Take Over Tropico Potteries, Inc.

GLADDING, McBean & Company, one of the oldest and best known pottery and terra cotta manufacturers on the Pacific Coast, have taken over the Tropico Potteries, Inc., at Glendale, which will give them increased facilities for handling their growing Southern California business.

For some time Gladding, McBean & Company have been interested in acquiring a plant in Southern California and finally came to the conclusion that their interests would best be served by purchasing the controlling stock in Tropico Potteries, Inc., the deal being consummated about a month ago.

In addition to buying all of the holding of Stephens & Co., they also purchased all of the other outstanding stock, with the exception of that held by parties directly connected with the active management of the company and other friendly Los Angeles interests.

The company in no sense loses its corporate identity but will continue to be operated as a separate and distinct corporation, with the same active management as heretofore. It will, of course, be the policy of both companies to work in close co-operation under standardized methods and policies, and it is confidentially believed that the merger will make it possible to render better service to the clients and customers of both companies in Southern California than was heretofore possible by either concern.

Tropico Potteries, Inc., was incorporated the latter part of 1920, and on January 1, 1921, purchased all of the assets of the Pacific Minerals & Chemical Company, chief of which were the plant and plant site located at Glendale, and extensive clay properties located in the Temescal Canyon, near Corona. The common stock control of Tropico Potteries, Inc., rested with Stephens & Company, investment bankers of San Francisco, Los Angeles and San Diego. The active management of the plant was entrusted to Mr. F. B. Ortman, who came to California from the Northwestern Terra Cotta Company of Chicago, and whose indefatigable energy more than any other one thing has contributed to the success of the enterprise.

The company's business since the date above mentioned has been regarded as successful, and practically all of the earnings have been put back into the plant in additions and betterments, so that the capacity at the present time is about double that of the former Pacific Minerals & Chemical Company. The company manufactures terra cotta, faience tile, sewer pipe and kindred products.

The following are some of the buildings upon which Tropico Potteries, Inc., has furnished terra cotta:

Bank of Italy building, Los Angeles, Morgan, Wells & Morgan, Architects.

First Methodist Episcopal Church, Los Angeles, John C. Austin, Architect.

Pacific Southwest Bank Branch, Long Beach, W. Horace Austin, Architect.

Security Trust & Savings Bank, Glendale, Alfred F. Priest, Architect.

Stephens & Company building, San Diego, John and Donald Parkinson, Architects.

Robinson Store, Los Angeles, Dodd & Richards, Architects.

Commodore Hotel, Los Angeles, Leonard L. Jones, Architect.

City Hall, Long Beach, W. Horace Austin, Architect.

City National Bank, El Paso, Texas, Trost & Trost, Architects.

Arnold Automotive Building, Los Angeles, T. Beverly Keim, Architect.

Brickmaking Good For The Lungs

One of the old arguments (and one that invariably moves the judge to action, if not to tears) that most unions adopt regarding the deleterious effects upon health that each special trade, in turn, produces on the worker, threatens to become an exploded theory in its application to brickmaking, for a Johannesburg doctor of the name of Mavrogordato, working in conjunction with Dr. Haldane, has supplied data showing that "brick dust effectively prevents diseases of the lungs, consequently brickmakers are not liable to consumption. The chief enemy of consumption is silica or rock dust, which acts not as an irritant but as a chemical poison on the tissues of the lung; the effect of this poison is to mummify the cells of the lungs, which in ordinary circumstances repel the attacks of invaders such as germs of consumption."—Building, Australia.

Architect Goes East

Mr. E. C. Hemmings of Hemmings & Starks, architects for the new Elks building, Sacramento, is making a tour of the principal eastern cities to inspect modern Elk Club buildings.

It was thought desirable by the Elks Hall Association to have a careful study made of Elks' buildings throughout the United States before completing the plans of the Sacramento building.

The proposed home will be seven or eight stories in height.

INTERIOR VIEW OF RAY COOK MARBLE PLANT, OAKLAND

Ray Cook Marble Company Busy

The Ray Cook Marble Company of Oakland, reports business so good at its new plant, foot of Powell street, Emeryville, that it is necessary to operate at full capacity. This company was established in 1919 and two years ago moved to its present building from 40th and Grove streets, Oakland. Exceptional shipping facilities are enjoyed, there being a spur track of the Southern Pacific close to the plant as well as transportation by boat. Mr. Ray Cook is the owner and manager. He has given a considerable part of his career to the marble business.

The accompanying view shows the interior of the marble works and gives the reader some idea of the size of the plant and number of men employed. Among the more important contracts taken by the company during the past year or two, are the following: Commercial Trust & Savings Bank at 16th street and Broadway, Oakland, William Knowles, Architect; Telegraph avenue Branch of the Central Bank, Oakland, William Knowles, Architect; Tapscott building at 19th and Broadway, Oakland, Reed & Corlett, Architects; Federal Land Bank building, Berkeley, James W. Plachek, Architect; Roos Bros. stores; American Bank at Telegraph avenue and Bancroft way, Berkeley; Goldman's store at 14th and Washington streets, Oakland, and the Bercovich building at 17th and Broadway, Oakland, Leonard H. Thomas, Architect.

Another Plant For Paraffine Companies

The Paraffine Companies, Inc., manufacturers of Pabco products, has purchased the plant of the Durable Roofing company of Portland, Oregon.

This makes the seventh plant of the Paraffine Companies, Inc., which is one of the west's largest industrial corporations, being a $12,000,000 company, employing over 2,000 people and doing an annual international business in excess of $15,000,000 annually.

It is a western company in every sense of the word, being entirely owned by 1,780 westerners.

The company operates large wood pulp wall board and sulphite plants at Port Angeles; a board mill and fibre box plant at Sumner, Washington.

The Paraffine Companies, Inc., products include roofings, paints, floor covering, wall board, paper boxes, shipping cases and allied products.

Architect Stone Moves

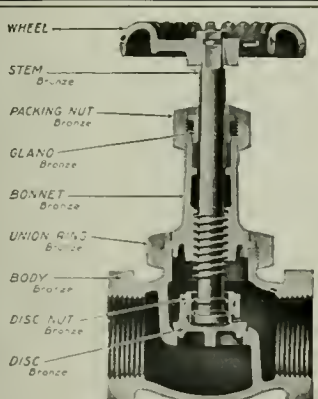
Mr. Louis S. Stone has moved his Oakland office from 1214 Webster street to 357 Twelfth street and will be glad to receive catalogues and manufacturers literature.

Buttonlath

There's the "Button"

— written into the specifications means that the finished job will be a source of pride to the architect and the builder, and a lasting satisfaction to the owner.

Buttonlath Manufacturing Co.
207 Balboa Building San Francisco



You don't have to worry about the inside of KENNEDY VALVES

they are made to last and they *do* last

Send for Catalog

THE KENNEDY VALVE MFG. CO.

Branch Offices and Warehouses:
NEW YORK, 95 John St.
SAN FRANCISCO, 23-25 Minna Street.
BOSTON, 47 India St.
CHICAGO, 228 N. Jefferson Street.

Sales Offices:
Salt Lake City, 503 Dooley Building.
El Paso, 704 Two Republics Building.
Seattle, L. C. Smith Bldg.

A Declaration for Co-operation in Building

THE ARCHITECT

1. Will design complete throughout, including structural design.
2. Will permit ample time for bidding.
3. Will open bids in public.
4. Will specify materials freely competitive.
5. Will award work at the bid price.
6. Will permit only responsible contractors to bid.
7. Will give complete information as to dimensions, quantity, quality and design.
8. Will furnish detail plans without delay.
9. Will approve estimates promptly.
10. Will allow equipment rental on monthly estimates.
11. Will furnish ample details.
12. Will fearlessly demand justice from the owner.
13. Will submit Joint Committee form of contract.
14. Will supervise work with his own force.
15. Will supply practical supervisors.
16. Will examine specified patented products for prescribed royalties.
17. Will allow insurance premiums as part of actual cost.
18. Will let General Contractor award all subcontracts.
19. Will make specifications clear for all divisions of work.
20. Will arrange for inspections of materials at source.
21. Will not urge continuance of work in case of strikes or lockouts.
22. Will assist the local chapter of Architects.
23. Will be resourceful in design of structures.
24. Will reward square dealing.
25. Will specify in accordance with decisions of National Board of Jurisdictional Awards.
26. Will respect loyalty of contractors.
27. Will encourage young workmen.
28. Will assume responsibility for errors in design.
29. Will permit arbitration as to dollars.
30. Will charge the A. I. A. designing fees.
31. Will pat contractor on the back upon completion of the job.

THE CONTRACTOR

1. Will insure completion of project.
2. Will make quantity survey of plans.
3. Will submit bids at stated period.
4. Will bid freely in competition.
5. Will base bid on his previous unit costs.
6. Will submit evidence of responsibility.
7. Will guarantee cost of the work shown in plans and specifications.
8. Will warrant time of delivery of structure.
9. Will develop adequate financial credit.
10. Will supply adequate construction equipment.
11. Will furnish ample tools.
12. Will furnish bond for faithful performance to owner.
13. Will sign Joint Committee form of contract.
14. Will perform portions of work with his own construction force.
15. Will supply experienced superintendence.
16. Will protect owner against liens.
17. Will insure owner against all accidents.
18. Will be fair to subcontractors.
19. Will be always fair to labor.
20. Will keep quality standards high.
21. Will guard public interests in labor rates and conditions of employment.
22. Will co-operate through local chapter of contractors.
23. Will display skill in construction methods.
24. Will, through integrity, inspire business confidence.
25. Will support rulings of National Board for Jurisdictional Awards.
26. Will be loyal to designers.
27. Will help train apprentices.
28. Will assume responsibility for errors in construction.
29. Will develop sound commercial practices.
30. Will charge legitimate construction fees.
31. Will shake hands with designer upon receipt of final estimate.

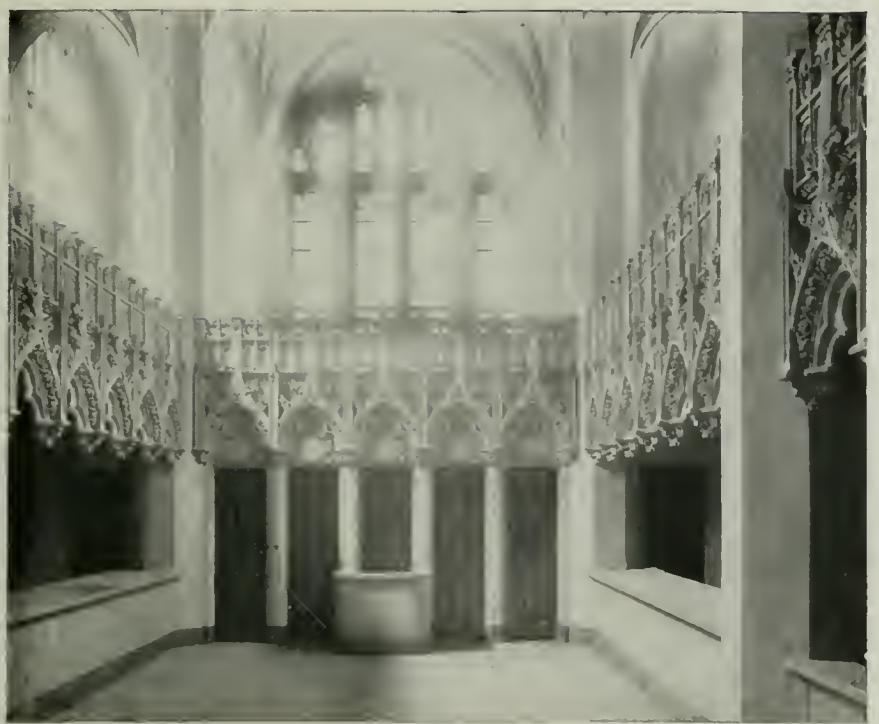
INCORPORATED 1884

Standard Accident Insurance Company

OF DETROIT, MICHIGAN

J. R. McKINNEY, Resident Manager
Pacific Coast Branch Office
Liability and Compensation Departments

California Commercial Union Building
SAN FRANCISCO, CAL.



FOYER, CIRCLE BUILDING, NEW YORK CITY
James C. Green, Architect
Columns, balcony, window trim and roof arches in light gray Terra Cotta of a faintly pink cast with slight bush-hammered texture

FOR INTERIOR EFFECTS

RICHNESS of interior finish for the entrance corridors in the modern office building need entail no extravagant outlay.

Terra Cotta presents a wide variety of surface finishes and color effects of the necessary sympathy for such intimate applications.

It also offers an ultimate saving apart from its reasonable initial cost. No expensive repolishing is ever necessary under any lapse of time.

Send for our literature pertaining to the resources of Terra Cotta for color treatment in interior and exterior applications. Address **National Terra Cotta Society**, 19 West 44th Street, New York City.

TERRA COTTA

Permanent Beautiful Profitable

Good Stucco and Bad

IT is too much to hope that there will not always be with us a certain percentage of builders who will "skin" the job whenever they can.

There is another class of builders, a little better citizens than the first—but not much better—who will do "a cheap job" because that is all the owner is paying for.

A good builder is still higher up the scale. He is more civilized; has better standards. He carries onto a job with him a certain dignity of his calling. There is something in his code that won't let him do a job unless he knows it is a good job—at least until the owner has been told all the hazzards and why the job won't be good. Even then the top notch builder won't do a cheap job because he won't have his name linked up with bad work.

* * *

What we had in mind at the start was stucco. Stucco is much in demand. The public, for the most, doesn't know good stucco from bad—until afterward. It is already afterward, on thousands and thousands of jobs. Bad stucco is proving itself here, there and all over. Still the public doesnt' know. It doesn't know how to judge stucco.

The builders who are putting it on either do know or should. The "Stucco Recommended Practice" of the American Concrete Institute tells precisely how. These standards are tried and proven. They have been carefully revised and kept up to date. They describe the best way to do the job to make it a lasting job. Probably not one builder in ten uses the American Concrete Institute standards.

* * *

A good many Portland cement stucco people have seen magnesite stuccoes under many different patent names come on the market. They have predicted ures for this material—that it won't stand the weather. We don't know that yet. Time will tell. A good deal of very bad work has been done with magnesite stuccoes. But the magnesite stucco business has been making progress because it has had energetic salesmanship and behind that salesmanship it has, more recently, had a good deal of study and research. The point of the matter is that the people interested in Portland cement succo need to do a little housecleaning on their own account. A good deal of the interest in that material has been casual because Portland cement stucco has not until recent times been a ready prepared product. Stucco has not been sold. The ingredients have been sold but Portland cement stucco has not had the same kind of direct sponsorship that some of the magnesite stuccoes have.

* * *

The Portland cement stucco situation can not be in very good standing when a man interested in magnesite stucco production and use will write as follows:

There is more cement stucco per unit of population on the Pacific Coast than there is in any other section of the country. Although climatic conditions here are remarkably mild, yet we cannot help feeling very strongly that the majority of the cement stucco now placed in this district will show serious failure inside of the next few years. Practically all of the construction is so new that failure has not yet reached a point where it is noticeable, but careful examination shows extensive cracking, loosening of stucco layers, and similar indications of early complete failure. The cause is traceable in practically all of the instances to faulty construction and application practice. (Observe that our magnesite friend does not attack the material, but the way it is used.) The recommendations of the American Concrete Institute for Portland cement stucco are never, or almost never, followed. Stucco is frequently applied to chicken wire stretched over black paper tacked directly on 2x3 studding. You can imagine about what condition this kind of stucco work will be in after two or three years.

Although we manufacture and market a competitive material, we are seriously concerned over the situation here, for stucco as a type of building material will unquestionably fall into some measure of disrepute when the extensive failures which must be expected begin to appear.

It is perhaps time that promotional effort on Portland cement stucco be turned even more energetically toward getting the work into the hands of local producers who will do more extensively what is already being done in some large centers, in getting Portland cement stucco on the market in ready mixed brands, following up the jobs to see them done right—something which can only be accomplished by making stucco knowledge more general among builders. The architects could help a great deal to eliminate bad stucco. Stucco is good only when it is good.—Concrete.

Civic Center Plans

Owing to their late arrival, a number of additional sketches of the proposed Los Angeles Civic Center, by Wm. L. Woollett, could not be shown this month. They will appear in the September number, however.

Photos by Courtesy of the Baltimore & Ohio Railroad

The Washington Union Station

"Gateway to America's Capital"

MEDUSA WATERPROOFING in the original concrete construction of this monumental passenger terminal building, has already, for many years, done its good work in keeping dampness out of the interior—as it doubtless will continue to do, for many years to come.

As the construction of fine buildings in America becomes increasingly a science and an art, the importance of preserving such structures against the natural elements becomes more and more apparent. At the same time, Architects are continually placing greater dependence upon Medusa Waterproofing, as the years make its reliable and enduring qualities more fully evident.

Medusa Waterproofing is a concentrated element which, when added in suitable proportions to plain cement during the mixing, will render the mass permanently damp-proof and water-repellent. As will be seen by reference to our catalogues in "Sweet's," pages 94-95 and 316-318, it may be added to any standard portland cement while mixing. Better still, if within shipping range, Architects may specify Medusa Waterproofed Cements—White or Gray—which contain the correct amount of Medusa Waterproofing added to the cement and thoroughly ground in during process of manufacture—saving all trouble in proportioning and mixing.

The Medusa Waterproofing Booklet contains detailed specifications and is fully illustrated. Shall we send it?

THE SANDUSKY CEMENT CO., Dept. P, Cleveland, Ohio

Medusa Stainless White Cement (Plain and waterproofed) and Medusa Waterproofing are carried in stock and sold by leading building-supply dealers in California, Oregon and Washington.

WATERPROOFED WHITE MEANS MEDUSA

MEDUSA

WATERPROOFING

Powder or Paste

Metal Lath Partitions For Residences

Pacific Coast architects will doubtless take keen interest in the announcement that the National Board of Fire Underwriters has awarded metal lath the one hour rating under three conditions, namely: non-bearing partitions, bearing partitions and ceilings under wood joisted floors, as fire protection to the families above. Wood lath has been awarded a twelve minute rating for non-bearing partitions, four minute rating for bearing partitions, and no rating whatever for ceilings.

As is understood by all construction men, fires destroy only in an upper direction. This, together with the position of the plaster on the ceilings, means that the ceiling test is considerable more severe than the partition test. Metal lath gave a resistence to seventeen hundred degrees fire in partition work, of three hours duration, while on ceilings the duration of protection was one and a quarter hours.

Metal lath construction for homes is a movement considerably bigger than the one which protected young America from 4th of July casualties or the one which seems to be at its height now of spending millions of dollars per year in traffic regulations to protect the public against automobile accidents. It is a movement that is going ahead in spite of all obstacles.

Insurance companies are showing a most favorable attitude toward recognition in insurance rates on homes protected by metal lath.

Colleges to Teach Building

Through gifts from the trustees of the Louis J. and Mary E. Horowitz Foundation, courses in building coustruction have been established at Yale University and Union College. The organization in charge of the course will be known as the Thompson-Starrett Foundation.

The Thompson-Starrett company offers to provide two annual prizes of $2,500 each to be awarded each year to graduates of the course who shall commend themselves by the quality of their work and by their promise as practical building constructors, and who desire to connect themselves with the Thompson-Starrett company for practical training in their chosen calling.

The course in building construction is to be offered as a development of the civil engineering course, rather than an appendage to a course in architecture. This move is made upon the theory that building construction is looked upon more as a profession in itself than subordinate to architecture.

Peerless Ironing Board-Table
No. 3-14

1 of 29

PEERLESS
BUILT-IN FURNITURE

conveniences. All standardized. Installed singly or in assemblies. Send for catalog of these new devices. All unusual.

SOLD BY
The HOOSIER STORE
Pacific Building, San Francisco

Los Angeles, Oakland, Portland, Seattle, Fresno, Stockton, San Jose, Long Beach, San Diego, Glendale.

Surety Man Makes Change

Mr. J. R. McKinney, who has a wide acquaintance with the architects and builders of San Francisco, has recently announced a change of business base, a change which has considerably widened the scope of his work. For many years Mr. McKinney was manager of the Surety Bonding department of the Fidelity & Casualty Company of New York. On May 1 he was appointed resident manager of the Standard Accident Insurance Company of Detroit. This is one of the oldest casualty and bonding companies in the United States and gives Mr. McKinney a vehicle for the purpose of taking care of the client's needs in workman's compensation, automobile, public liability and other casualty insurance as well as surety bonds as heretofore.

Ernest E. Weihe Complimented

The following complimentary article of Mr. Ernest E. Weihe of San Francisco appears in the last number of Pencil Points, together with an excellent likeness of Mr. Weihe:

Ernest E. Weihe, winner of the Paris Prize of the Society of Beaux-Arts Architects in 1919, recently returned from his studies abroad.

Mr. Weihe was born in Califoraia, and he entered an architectural office in San Francisco in 1907, doing office work part of the time and attending the classes of the San Francisco Institute of Art. Later he took up the work of the Beaux-Arts Institute of Design at the Atelier of the San Francisco Architectural Club under the patronage of Arthur Brown, Jr.

In 1912-13 he worked for the Panama-Pacific International Exposition Company under Edward H. Bennet, Jules Guerin, George W. Kelham and other well-known members of the Commission. In 1913 he became connected with the office of Bakewell & Brown, and coatinued to follow the program of the Beaux-Arts Institute of Desiga. He was awarded the diploma in 1918, won prizes in the Warren, Loeb, Pupin and other competitions, also won a competition for a traffic solution for the foot of Market street, San Francisco, including ferry buildings, boat landings, docks, etc.; also won competition for design for Aquatic Park in San Francisco Bay, which is now being carried out.

Mr. Weihe worked under the criticism of Harvey W. Corbett and Maurice Prevot and won the Paris Prize in 1919.

He worked for several months for Dennison & Hirons and sailed for Europe in 1920. He followed the courses of the Ecole des Beaux Arts in the atelier of MM. Laloux and Lemaresquier. He also did several competitions in the office of M. Paul Bigot, and spent a great deal of time studying the latter's model of Rome.

Mr. Weihe traveled in France, Belgium, Holland, England, Italy, Spain and Switzerland, for the most part on a bicycle, making many sketches.

Mr. Weihe returned in May and is once more in San Francisco with Bakewell & Brown.

Opens Oakland Office

Architect Louis Stone has opened permanent offices in Room 16, 357 Twelfth street, Oakland. He will continue to maintain offices in the Belding building, Stockton.

For Distinctive Hardwood Woodwork

-KOA-
HAWAIIAN MAHOGANY

A High Grade Hardwood, Medium Priced

Koa takes an elegant finish and is unusually highly figured.

When finished natural Koa shows exquisite high lights and shadows, or it can be stained as Mahogany often is. Koa comes in the same fine widths and high grade as Mahogany.

More Distinctive Than Gum

Koa can be finished in neutral tones like gum. It has, however, a more distinctive and aristocratic appearance than gum, and it is a far more durable wood. Koa improves with age.

Koa gives an aristocratic effect at a medium price.
Koa will express your individuality.

We have on hand a large stock of fine dry Koa, ready for immediate use.

WhiteBrothers

Hardwood Headquarters

NORTHERN CALIFORNIA DISTRIBUTORS

5th and Brannan Sts San Francisco

Los Angeles Contractors Condemn Bidding for Labor

A vigorous stand has been taken by Southern California Chapter, Associated General Contractors, against the practice of bidding up wages for building craftsmen during periods of apparent labor shortage. This practice does not increase the labor supply, but has a tendency rather to decrease it, as experience has shown that efficiency decreases rather than increases with boosting of wages. Co-operation of all contractors to combat the practice of bidding for labor is urged in a resolution adopted by the executive board of the Association.

Architect's Claim Denied

A claim for $128 for work performed by Mr. W. H. Weeks, San Francisco architect, in 1919, in the Murdock School District, duly approved by school officials, was on presentation for payment turned down by Ed. S. Ball, treasurer of Glenn County, on the ground that it is an outlawed demand. Architect Weeks then took the matter up with District Attorney H. W. McGowan, who upheld the position taken by Ball that the claim was outlawed because of failure to present it within the statutory period, and that as county treasurer he could not pay the claim.

Captain Barneson to Build

Captain John Barneson of San Francisco has commissioned Architects Powers & Ahnden to prepare plans for a Class A country residence at San Mateo to cost $150,000. The house will have a steel frame with brick walls, reinforced concrete floors, metal lath partitions and hollow tile roof. The style will be Italian Renaissance.

Oakland Commercial Building

Architect Henry H. Meyers is preparing plans for a four-story reinforced concrete store and loft building for the Jackson Furniture Company. The building on the site, which was formerly occupied by the Pacific Gas & Electric Company, will be razed. Mr. Chas J. Heeseman is the owner of the property.

Branch Bank Building

Architects Bakewell & Brown have been commissioned to prepare plans for a branch bank building to be erected at Valencia and 22nd streets, San Francisco, for the Hibernia Savings & Loan Society. The estimated cost is $60,000.

Lindgren Company Changes Name

The name of the Lindgren Company has been changed to Lindgren & Swinerton, Incorporated, and new offices have been taken in the Standard Oil building, San Francisco.

The Georgian Period

The new edition of "The Georgian Period," published by the U. P. C. Book Company, Inc., 239 West 39th street, New York, is one of the most useful books an architect can have. Ever since 1898 "The Georgian Period" has been regarded as the most important authoritative source of design inspiration for architectural work in the manner of Colonial days, for in it are preserved accurate records of Colonial houses, churches, and public buildings in the form of detailed and measured drawings and photographic reproductions. More than one hundred architects originally contributed to this monumental work under the careful guidance of William Rotch Ware. The new edition has been arranged and indexed with a view to making it especially convenient for reference in the architect's office. The work is in six art portfolios, size 10 in. x 14 in., 454 full-page plates and measured drawings, 272 pages of text, with 500 illustrations. The price is $60 postpaid.

Addition to Palo Alto School

Plans are being completed by Architect Birge M. Clark of Palo Alto for a $110,000 addition to the Union High School building at Palo Alto. The work will include completion of the interior of the present auditorium, the construction of four additional classrooms, a new gymnasium, machine shop and swimming pool. The same architect recently awarded a contract at $20,400 for the construction of a frame and stucco residence with tile roof on the University Campus for former President David Starr Jordan of Stanford University.

More Architects Move

Architect A. W. Smith of Oakland has moved from Broadway to the American Bank building, Oakland.

Architect W. E. Shirmer has moved into larger offices in the Thayer building, Oakland.

Architect B. J. S. Cahill has moved to the Everson building, Oakland.

Architect Albert Schroepfer has removed his offices to the Foxcroft building, 68 Post street, San Francisco.

Western Product Selected

The Puyallup School Board has selected Birchfield steel boilers for heating the Central and Meeker school buildings. A large number of school boards on the Pacific Coast, including those of Oakland, Pasadena, Glendale and Reedley, California; Spokane Bellingham, Seattle, Olympia, Chehalis and Tacoma, Washington, have selected Birchfields, which the manufacturers declare have gained an enviable reputation for fuel economy and satisfactory service.

Draftsman Wanted

Draftsman, Accurate in Figures to Make Working Drawings for Marble Work and to Make Lists for Shop Work.

Address A. B. C. This Office

H. RUMPF

CONTRACTING DECORATOR
CUSTOM BUILT FURNITURE
DRAPERIES AND FURNISHINGS

School and Theater Equipment
Drop Curtains, Draperies

Specializing in Furnishings for Hotels, Lodges, Clubs, Steamships, Apartment Houses.

Estimates Furnished

567 HOWARD STREET, SAN FRANCISCO, CALIF.

Phone Doug. 3123-4 Oak. 5050-1

EASYSET
STORE FRONTS
GLASS OF ALL KINDS
Mirrors Art Bevel Plate

Cobbledick-Kibbe Glass Co.

666-668 HOWARD ST.
SAN FRANCISCO, CAL.

WASHINGTON AT THIRD ST.
OAKLAND, CAL.

STANLEY
GARAGE
HARDWARE

Sunlit Basements

RAISE the basement out of the depths and darkness by providing windows of generous size. Make the home perfect in this respect and in other ways by (specifying) an abundance of good glazing.

Then specify "the best glass"—that of the American Window Glass Co. It is best because it is made from unvaryingly mixed batches, perfectly melted in the world's largest furnaces and of greater tensile strength, less wave and more luster by reason of improved methods of drawing and blowing. It is uniformly flat and of uniform thickness, acid washed before grading and then graded according to highest standards.

The contractor, the glazer, the frame manufacturer, the owner—all will thank you for specifying the glass of the American Window Glass Co. The elliptical mark on each box of the genuine means quality, the economy which goes with perfect packing and final results which can be obtained only by the use of "the best glass."

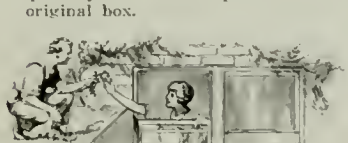
AMERICAN WINDOW GLASS CO. PITTSBURG PA. U.S.A.

Suggested Specifications for the Best Window Glass

"All the clear window glass glazed in this building shall be the AMERICAN WINDOW GLASS COMPANY'S make, or equal thereto."

Identification Label—Each light of single strength or double strength "AA" or first quality window glass, as well as 16 oz. first and second quality Picture Glass of AMERICAN WINDOW GLASS COMPANY'S manufacture is labelled as shown herewith. This label identifies the quality.

"A" and "B" grades of Window Glass are not labelled, but have a quantity brand stamped on each original box.



AMERICAN WINDOW GLASS CO

GENERAL OFFICES: PITTSBURGH, PA. The BEST Glass BRANCHES IN PRINCIPAL CITIES

Yards:
Tracy - Brentwood
Patterson - Newman
California

Phones:
Kearny 2073 - 2074

SANTA FE LUMBER CO.

A. J. RUSSELL, Mgr.

Wholesale and Retail

POLES AND PILING
OIL RIG AND SHIP TIMBERS
SAGINAW SPECIAL SHINGLES

LUMBER

FENCE POSTS
SIMPLEX SILOS
PAPEC ENSILAGE CUTTERS

16 California Street

San Francisco, Calif.

from tree to consumer

Pine and Redwood Lumber

SASH DOORS AND MILL WORK

SUNSET LUMBER COMPANY

MANUFACTURERS — WHOLESALE AND RETAIL

Main Office and Yards:

FIRST AND OAK STREETS, OAKLAND

Phone Oakland 1820

POPE & TALBOT

Manufacturers, Exporters and Dealers in

Lumber, Timber, Piles, Spars, Etc.

Office, Yards and Planing Mills

859-869 THIRD STREET, SAN FRANCISCO, CAL.

Mills: Port Gamble, Port Ludlow and Ulsalady, Washington

Furnaces

AGENTS FOR

FRONT RANK All Steel Warm Air Furnaces

AND THE OLD RELIABLE

THATCHER Cast Iron Warm Air Furnaces

REGISTERS — FURNACE FITTINGS — REPAIRS

Montague Range and Furnace Company

327-329 JESSIE STREET Phone Garfield 1422 826-830 MISSION STREET

SAN FRANCISCO, CALIF.

When writing to Advertisers please mention this magazine.

Detail of Athletic Club, Columbus, Ohio. Richards, McCarty & Bulford, Architects

AN admirable example of a face brick club building, where substantial comfort, prosperous generosity, and a measure of luxury are to be embodied in an artistic form. The diapering of the English Cross Bond makes a most pleasing effect in the wall surface. If you have not "Architectural Details in Brickwork," a collection of examples of artistic brickwork, ask for the portfolio. It is sent without charge to architects requesting it on their office stationery. Address, American Face Brick Association, 1759 Peoples Life Building, Chicago, Illinois.

IRON AND STEEL PRODUCTS

WAREHOUSE AND MILL SHIPMENTS

STEEL BARS
for
CONCRETE REINFORCING
FURNISHED *and* INSTALLED

EDW. L. SOULE CO.
SAN FRANCISCO

IRON AND STEEL ELS SAN FRANCISCO

SUTTER 2821

RIALTO BUILDING

What Does It Mean to You

—when a manufacturer trade marks his product?

It means this—

He is maintaining QUALITY standards—standing squarely behind his products—protecting you and himself from inferior merchandise.

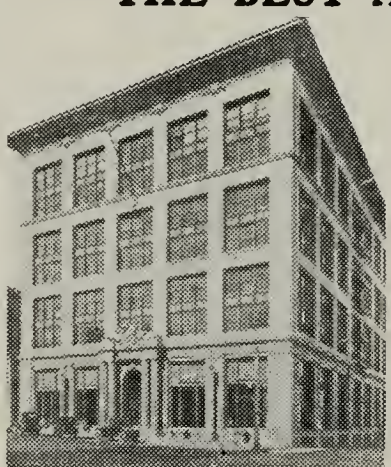
When specifying hardwood, say

"BATAAN" MAHOGANY

Lumber, Veneers, Plywood Panel
Hardwood Flooring

CADWALLADER-GIBSON COMPANY
5th and Brannan Streets
San Francisco, Calif.
Phones Douglas 1737-8

THE BEST ARGUMENT FOR ANY BUILDING



A fine building that hasn't the right kind of a heating boiler is like the giant of a man who puts up a healthy front and has a weak heart. Such a building, with all its frills, is'nt worth much to the occupants, hence it *can't* be worth much to the owner.

THE DON LEE BLDG.,
San Francisco, is equipped with
KEWANEE BOILER
AND KEWANEE GARBAGE BURNER
both burning oil with high efficiency

LOW PRESSURE HEATING BOILERS

HIGH PRESSURE POWER BOILERS

KEWANEE BOILER COMPANY

San Francisco: 216 Pine Street

Los Angeles: 420 East 3rd Street

Present Cost of Building Materials

THESE quotations are based on reliable information furnished by the San Francisco material houses. Date of quotations, August 20, 1923.
All prices f. o. b. cars San Francisco or Oakland For country work add freight and cartage to prices given.

Bond—1½% amount of contract.

Brickwork—
Common, $36.00 per 1000 laid.
Face, $80.00 per 1000 laid.
Enamel, $150.00 per 1000 laid.
Common, f. o. b. cars, $15.50, plus cartage.
Face, f. o. b. cars, $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (Delivered to building in carload lots.)

12x12x3 in.	$102.00 per M
12x12x4 in.	115.00 per M
12x12x6 in.	160.00 per M
12x12x8 in.	165.00 per M

Hod carriers, $6.50 per day.
Bricklayers, $10.00 per day.
Lime—$2.25 per bbl.; carload, $2.15

Composition Floors—24c to 50c per sq. ft. In large quantities, 24c per sq. ft.

Composition Stucco—$1.90 to $2.10 per sq. yard (applied).

Concrete Work (material at San Francisco bunkers)—

No. 3 rock	$2.15 per yd.
No. 4 rock	2.30 per yd.
Niles pea gravel	3.50 per yd.
Niles gravel	2.35 per yd.
Niles top gravel	2.75 per yd.
City gravel	2.15 per yd.
River sand	1.75 per yd.
Delivered bank sand	1.00 per yd.

SAND

Del Monte	$1.25 to $1.50 per ton
Fan Shell Beach (Car lots, f. o. b. Lake Majella)	$2.50 to $3.00 per ton
Swedish cement	$2.85 per bbl.
Belgian cement	2.65 per bbl.
Cement (f. o. b. cars)	$3.03 per bbl.
Rebate for sacks, 10c each.	
Atlas "White"	$ 9.75 per bbl.
Medusa "White"	$ 9.75 per bbl.
Forms, Labors	$30.00 per M

Wage—

Concrete workers	$5.00 per day
Cement finishers	8.50 per day
Laborers	5.00 per day

Dampproofing—
Two-coat work, 25c per yard.
Membrane waterproofing—4 layers of P. B. saturated felt, $5.25 per square.
Hot coating work, $2.00 per square.
Wage—Roofers, $8.00 per day.

Electric Wiring—$6.00 to $10.00 per outlet for conduit work (including switches).
Knob and tube average $3.00 to $5.50 per outlet.
Wage—Electricians, $8.00 per day.

Elevators—
Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in 4-story bldg., $3250; direct automatic, about $3000.

Excavation—
$1.25 per yard, if sand. Teams, $10.00 per day. Trucks, $21 to $30 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—
Ten-foot balcony, with stairs, $105.00 per balcony.

Glass—(Consult with manufacturers.)
21 ounce, 16c per square foot.
Plate, $1.10 per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. ft.
Obscure glass, 28c per square foot.
Note—Add extra for setting.
Wage—Glaziers, $8.00 per day.

Heating—
Average, $2.25 per sq. ft. of radiation, according to conditions.
Wage—Steamfitters, $9.00 per day.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.
Wage—Iron workers, bridge and structural, $9.00 per day.
Architectural iron workers, $7.00 per day.

Lumber—(Prices delivered to bldg. site)
Common, $40 per M (average).
Com'n O.P. (select, avrg.....$43.00 per M
Flooring—

1 x 6 No. 3 Form lumber	$28.00 per M
1 x 4 No. 1 flooring	75.00 per M
1 x 4 No. 2 flooring	68.00 per M
1 x 4 No. 3 flooring	53.00 per M
1 x 6 No. 2 and better flooring	68.00 per M
1¼ x 4 and 6 No. 2 flooring	70.00 per M

Slash grain—

1 x 4 No. 2 flooring	60.00 per M
1 x 4 No. 3 flooring	53.00 per M

No. 1 common run to

T. & G.	$43.00 per 1000
Lath	7.00 per 1000

Shingles—(Add cartage to prices quoted)

Redwood, No. 1	$1.25 per bdle.
Redwood, No. 2	1.10 per bdle.
Red Cedar	1.50 per bdle.

Building Paper—

1 ply per 1000 ft. roll	$6.25
2 ply per 1000 ft. roll	9.60
3 ply per 1000 ft. roll	14.55
Sash cord com. No. 7	1.25 per 100 ft.
Sash cord com. No. 8	1.40 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.30 per 100 ft.
Sash weights cast iron	60.00 Ton
Nails, $4.25 base.	

Hardwood Flooring—

		⅝x3¼" T & G Maple	$137 M ft.
		1⅛x2¼" T & G Maple	140 M ft.
		⅞x3½" Sq. Edge Maple	116 M ft.
	½x2¼" T&G	⅝x2" T&G	⅜x2" Sq. Ed.
Clr. Qtd. Oak	$179 M	$124.00 M	$156 M
Sel. Qtd. Oak	135 M	92.50 M	114 M
Clr. Pla. Oak	140 M	92.50 M	114 M
Sel. Pla. Oak	121 M	80.00 M	97 M
Clear Maple	135 M	81.00 M	
Orion	140 M	100.00 M	100 M
Bagac	130 M	90.00 M	90 M
Laying and Finishing	16c ft.	15c ft.	13c ft.

Wage—Floor layers $9.35 per day.

Millwork—

O. P., $100 and up per 1000. R. W., $120 and up per 1000.
Double hung box window frames, average) with trim, $8.00 and up, each.
Doors, including trim (single panel), $10.50 and up, each.
Doors, including trim (five panel), $8.50 each.
Screen doors, $3.50 each.
Cases for kitchen pantries seven feet high, per lineal foot, $7.50 each.
Dining room cases, $8.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average) $16 per m.
For smaller work, average, $28.00 to $35.00 per 1000.
Wage—Carpenters, $8.00 per day.
Laborers—$5.00 per day.

Marble—(Not set), add 40c to 60c per ft. for setting.

Columbia	$1.60 sq. ft.
Alaska	1.60 sq. ft.
San Saba	3.15 sq. ft.
Tennessee	2.00 sq. ft.
Verde Antique	3.75 sq. ft.
Westfield Green	3.50 sq. ft.

Wages—Marble setters, $8.00 per day; helpers, $5.50 per day. Marble polishers and finishers, $6.00 per day.

Painting—

Two-coat work	30c per yard
Three-coat work	45c per yard
Whitewashing	5c per yard
Cold water painting	9c per yard

Turpentine, $1.68 per gal. in cases and $1.53 per gal. in tanks.
Raw Linseed Oil....$1.35 per gal. in bbls.
Boiled Linseed Oil..$1.37 per gal. in bbls.
Pioneer white and red lead, 12½c lb. in one-ton purchases; 14½c lb. for less than 500 lbs.
Wage—Painters, $8.00 per day.
Note — Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.50 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Pipe Casings—14" (average), $7.50 each.

Plastering—

Interior, on wood lath, 65c per yard.
Interior, on metal lath, $1.25 per yard.
Exterior, on brick or concrete, $1.30 per yard.
Portland White, $1.75.
Interior on brick or terra cotta, 60c to 70c per yard.
Exterior, on metal lath, $1.85 to $2.25 per yard.
Wood lath, $7.00 a yard per 1000.
Metal studding, $1.25 to $1.50 per yard.
Suspended ceiling and walls (metal furring, lathing and plastering), $2.00 per yard.
Galv. metal lath, 33c and up per yard, according to gauge and weight.
Lime, f. o. b. S. F. warehouse. $2.50 bbl.
Lime, bulk, per ton of 2000 lbs.. $19.50
Hardwall plaster, $15.40 per ton, f. o. b. warehouse. (Rebate on sacks, 15c.)
Finishing plaster (carload lots), $19.00.
Hydrate of lime, $19.50 per ton, f. o. b. warehouse.
Wage—Plasterers, $10.00 per day.
Lathers, $8.00 per day.
Hod carriers, $7.00 per day.

Plumbing—

From $70.00 per fixture up, according to grade, quantity and runs.
Wage—Plumbers, $9.00 per day.

Reinforcing Steel—

Base price for car load lots, $3.80 per 100 lbs., f. o. b. cars on docks.
Average cost to install, $25 per ton.
Wage—Housesmiths, $8.00 per day.

Roofing—

Five-ply tar and gravel, $6.25 per square for 30 squares or over.
Less than 30 squares, $6.50 per square.
Tile, $35.00 to $50.00 per square.
Redwood Shingles, $12.00 per square in place.
Cedar Shingles, $12.00 per sq. in place.
Reinf'd Pabco, 7 yr. roof, $7.50 per sq.
Reinf'd Pabco, 10 yr. roof, $10.25 per sq.
Reinf'd Pabco, 20 yr. roof, $13.50 per sq.
Recoat, with Gravel, $3.00 per square.
Wage—Roofers, $8.00 per day.

Sheet Metal—

Windows—Metal, $2.00 a square foot.
Fire doors, (average), including hardware, $2.30 per sq. ft.

Skylights—

Copper,$1.25 a square foot (not glazed)
Galvanized iron, 35c a square foot (not glazed).
Wage—Sheet metal workers, $8.50 per day.

Stone—

Granite, average $8.00 sq. ft. in place.
Sandstone, average $5.50 sq.ft. in place.
Indiana Limestone, $4.25 per sq. ft. in place.
Wage—Stone cutters, $8.00 per day.
Stone setters, $8.50 per day.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average 85c per lin. ft.
Note—Consult with agents.

Structural Steel—$117 per ton (erected).
This quotation is an average for comparatively small quantities.
Light truss work higher; plain beam and column work in large quantities, less.
Cost of steel for average building (erected), $115 per ton.

Steel Sash—

All makes, from S. F. stock, 26c to 34c per sq. ft.
All makes, plant shipment, 28c to 34c per sq. ft.
(Includes mullions and hardware.)

Tile—White glazed, 80c per foot.
White floor, 80c per foot.
Colored floor tile, $1.00 per foot.
Promenade tile, $1.00 per sq. ft. laid.
Wage—Tilesetters, $8.50 per day.

SERVICE

TESTING
INSPECTION
CONSULTATION
PRODUCTION

Structural and Engineering Materials

ROBERT W. HUNT CO.

ENGINEERS

Chemical and Physical Testing Laboratories

New York Chicago Pittsburgh
St. Louis San Francisco Mexico City
London Montreal

IMPERIAL
WATERPROOFING

Will Keep Out Moisture and Dampness

Trade **WATERX** Mark

If your building is leaking through the walls or around the windows, or if the Basement walls are wet below ground — call up SUTTER 978.

IMPERIAL WATERPROOFING is manufactured by BROOKS & DOERR, 460 7th St., San Francisco

1002-04 Merchants National Bank Building
Phone Sutter 978
SAN FRANCISCO, CAL.

"HOFFITE"

The Foremost Plastic Asbestos

STUCCO

Often Imitated — Seldom Equaled

A "Hoffite" exterior is a seamless wall of stone, impervious to the weather. Fire and water proof.

Not a new or untried product. We have used a combination of magnesite and asbestos in our stucco for six years.

The First Cost Is the Last Cost
Let Us Give You Facts and Figures

Literature on Hoffite, instructions for applying and table showing covering capacity will be sent on request

The Hoff Magnesite Co.

MANUFACTURERS

MILLER & ALF
Gen. Sales Agents

1040 S. Broadway Los Angeles
337 Monadnock Bldg. San Francisco

CORROSIRON

the acid-proof drain pipe

Make your acid drain lines permanent -:- -:-

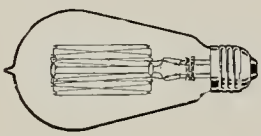
Corrosiron drain pipe and fittings manufactured and carried in stock in San Francisco

PACIFIC FOUNDRY COMPANY

Harrison and Eighteenth Streets
SAN FRANCISCO

ROBERTS MFG. CO.

Lighting Fixtures
Electric Appliances
Incandescent Lamps



WILLYS FARM LIGHTING AND POWER PLANTS

663 Mission Street San Francisco

Sutter 4998

TOKHEIM

OIL TANK & PUMP CO.

Factory Branch
806 Sharon Building,
55 New Montgomery Street
San Francisco

PERMALIGHT

FLAT MILL WHITE

A Snow White Paint in Oil, giving equal opacity of cold water paints. Can be applied with spraying machines at a small increase of cost over water paints for use in factories, warehouses, loft buildings, laundries.

Hill, Hubbell & Co.

TECHNICAL PAINTS

SAN FRANCISCO

Los Angeles Portland Seattle New York

Specify

TRADE MINWAX MARK

Plaster Bond and Dampproofing No. 300

Applied to the inside of exterior walls. It cures tacky and remains tacky and plastic indefinitely. It forms a tenacious, perfect and lasting bond between wall and plaster.

Waterproof your buildings while they are dry

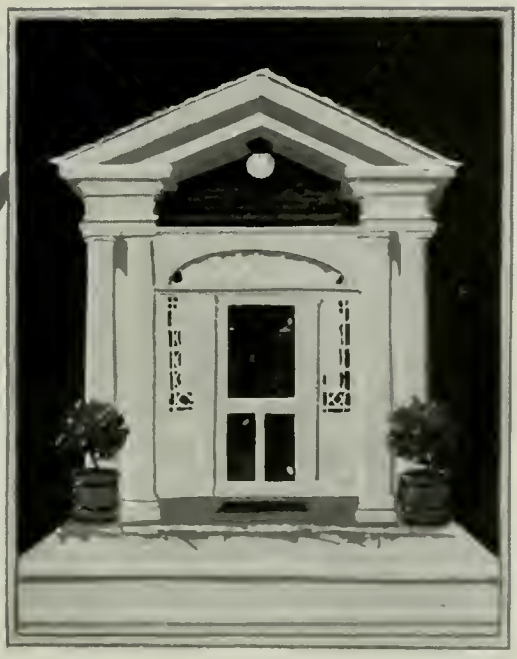
Send for Booklet on Products, Data and Specifications

MINWAX CO., INC.

K. M. HAYDEN
22 Battery St.
San Francisco

W. C. LEA
653 So. Clarence St.
Los Angeles

beautiful
durable
reliable



Specify
PABCO
Varnishes

one of the famous
TRADE MARK
PABCO PRODUCTS

The PARAFFINE COMPANIES, Inc.

A $12,000,000 Corporation Operating 17 Plants on the Pacific Coast

San Diego Los Angeles San Francisco
Oakland Portland Seattle

Perfect Concealment with

The "California" Secret Installation

This new economical and space-saving method of installation of wall beds has met with instant approval by all architects and owners who have seen it. It solves the problem of having too many doors and windows and at the same time conforms to the most modern idea in wall decoration.

The above illustration shows a "California" square tube wall bed in walnut finish hung on a secret installation door. Notice the perfect concealment accomplished by this new method of installation.

Write for Complete Data and Specifications

CALIFORNIA WALL BED COMPANY

714 Market Street, San Francisco

165 Thirteenth Street, Oakland 1040 S. Broadway, Los Angeles

ANNOUNCEMENT

We desire to announce that the U. S. Patent Office on June 12, 1923, granted us reissue Letters Patent No. 15624.

This patent covers the Bank Screen Reflector which we originated, and we intend to use all means possible to prevent encroachment upon the rights thus granted us by the United States Government. Infringers will be prosecuted.

I. P. FRINK INC.

24TH STREET AT 10TH AVENUE
NEW YORK CITY

When writing to Advertisers please mention this magazine.

Beauty, Economy, Satisfaction —

THE use of RICHMOND FACE BRICK is not only a matter of adding to the beauty and permanence of a structure but is a source of lasting satisfaction.

RICHMOND FACE BRICK, figured over a period of years, is more satisfactory than many other materials regardless of price.

RICHMOND FACE BRICK brings to the user the satisfaction of having used the best material obtainable and the knowledge that its strength and beauty will endure through the ages.

FACE BRICK FIRE BRICK COMMON BRICK
PAVING BRICK ENAMEL BRICK
ROOFING TILE ATLAS WHITE CEMENT
HOLLOW BUILDING TILE
MANTEL AND FLOOR TILE

Richmond Pressed Brick Company
Richmond California

Los Angeles Pressed Brick Company
Los Angeles California

United Materials Company
Northern California Distributors
Sharon Building San Francisco

All-in-One
Bath Tubs

All-in-One
Lavatories

The All-in-One Ideal

It is our one objective to produce the most efficient and the most beautiful plumbing fixtures. True, this is a high mark for which we are aiming, but we present to you the All-in-One line as the product of thorough study, the best of materials, the best of workmanship, and ask you to judge it from the standards of plumbing fixture excellence.

ASK YOUR JOBBER OR WRITE

ALL - IN - ONE

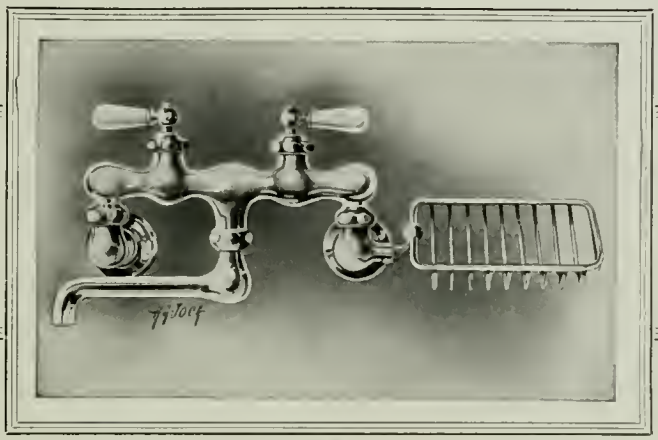
Plumbing Fixture Corporation

Plant, North Sacramento

Office, Rms. 230-231 Oschner Bldg., Sacramento, Calif.

San Francisco Office, 314 Hobart Building

A faucet that will deliver hot, mixed or cold water :: ::



Installed in the kitchen sink, this popular Quaker fixture supplants the customary two separate faucets, and provides a convenient place for soap.

It lightens work
and saves time

HAINES, JONES & CADBURY COMPANY · HAJOCA · PHILADELPHIA · TRADE MARK

HAINES, JONES & CADBURY CO.
MAKERS OF PLUMBING SUPPLIES
857-859 FOLSOM STREET, SAN FRANCISCO
PHILADELPHIA-NEW YORK-RICHMOND, VA.-SAVANNAH
JACKSONVILLE-CHARLOTTE

The Ornamentation on the Vase and Plaque was
SAND BLASTED *with*

FAN SHELL BEACH SAND

ONE OF THE WHITE SANDS SHIPPED BY

DEL MONTE PROPERTIES COMPANY

Phone Sutter 6130 401 CROCKER BUILDING San Francisco

The Petrium Sanitary Sink

Makes Kitchen Work Quieter

Because of the elasticity of the composition of its surface The Petrium Sanitary Sink reduces breakage and the jarring, rattle and clatter of dishes on the drainboards to a minimum.

Architects, your principals will welcome your specification of the Petrium.

This is one of the many advantages that commend the Petrium to discriminating housewives.

PETRIUM SANITARY SINK CO.

FIFTH AND PAGE STREETS, BERKELEY, CALIFORNIA

The Petrium Sanitary Sink is displayed at the factory; Building Materials' Exhibits, Oakland and San Francisco; by our San Francisco distributors, M. E. Hammond, Hoosier Cabinet Store and by local representatives in the outside territory.

ES
PRODUCTS

ES ELEVATOR SIGNAL SYSTEMS

ES COMPLETE FLASHLIGHT SIGNAL SYSTEM

For three or more cars which travel continually and make complete trips—as in office buildings.

Consists of a Push Button Box on each floor, a Waiting Passenger Lantern over each corridor opening and an Operator's Signal Fixture in each elevator car.

ES FLASHLIGHT ANNUNCIATOR SIGNAL SYSTEM

For any number of elevators which do not always travel continually or always make complete trips—as in many hotels.

Consists of a Push Button Box on each floor and an Annunciator (having miniature lamp indications) in each elevator car.

ES DEPARTMENT STORE SIGNAL SYSTEM

For elevators which always stop at every floor—as in department stores.

Consists of a Waiting Passenger Lantern over each corridor opening.

ES LOCDROP ANNUNCIATORS

Require manual cancelling of the calls and are recommended when the type of building does not justify the expenditure necessary for an automatic signal system.

See Sweet's Architectural Catalog and exhibit at Architects' Samples Corporation (N. Y. C.)

ELEVATOR SUPPLIES COMPANY, INC.

Main Office and Works: HOBOKEN, NEW JERSEY

Branch Offices

CLEVELAND
1039 Walnut Avenue

CHICAGO
111 S. Jefferson Street

SAN FRANCISCO
186 Fifth Street

PHILADELPHIA
1714 Ludlow Street

ST. LOUIS
Railway Exchange Bldg.

MIDWEST AIR FILTERS

for every ventilating and air conditioning purpose

Sanitary *from Federal Reserve Bank of Richmond, Va.*

We have operated Midwest Air Filter equipment in our main building in connection with ventilating basement and sub-basement continuously since middle of last October. It has met fully air-cleaning needs for which we had it installed. We have just ordered additional equipment of same type for use in our annex building basement ventilation.

Efficient

A. R. SMITH, Construction Engineering Dept., GENERAL ELECTRIC CO. of New York, on page 724 in the company's official "GENERAL ELECTRIC REVIEW," describes the use of MIDWEST UNIT AIR FILTERS for the protection of TURBO GENERATORS

Clean

City of PASADENA, Cal., installs MIDWEST Compressor Air Filters to deliver CLEAN DRY AIR to the sludge tanks of its new Activated Sludge Sewage Disposal Plant at Alhambra.

JOHN R. STEFFENS-LOMAX CO.

Pacific Distributors

Sutter 2297 951-3 Monadnock Building San Francisco, Calif.

MARBLE BATHS

have been in use since the days of Old Rome. They are rich in attractiveness, easy to keep clean, and they never wear out. They can be installed in old buildings as well as new, and the cost, reckoned by years of service, is extremely low.

VERMONT MARBLE COMPANY

San Francisco
Tacoma

PROCTOR,
Vermont

GOOD FOR ALL TIME VERMONT MARBLE

Cast Iron Stairs and Store Fronts

Bank and Office Railings, Elevator Enclosures and Fire Escapes

C. J. HILLARD & CO., Inc.
Nineteenth and Minnesota Streets
Telephone Mission 1763
SAN FRANCISCO, CALIF.

DEPENDABILITY
"Since 1858"

LINOLEUMS
WINDOW SHADES

Carpets
Draperies
Rugs

Estimates furnished

D. N. & E.
Walter & Co.

562-572 Mission Street
SAN FRANCISCO
Los Angeles Portland Seattle

Sacramento County Court House, Sacramento, Cal.

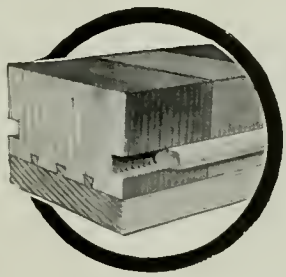
Specify

COLUMBIA MARBLE

Samples and complete information relative to the use of Columbia Marble sent upon request.

COLUMBIA MARBLE CO.
413 Rialto Building, San Francisco
Telephone Sutter 1244

Composing Room, Fresno (Calif.) Bee



Bloxonend — *A Permanent and Smooth Floor*

A thorough investigation of Bloxonend's performance in a number of large industrial plants convinced the owners, architect and engineer of the Fresno Bee Bldg. that it costs less per sq. ft. per year than any other flooring manufactured. The comfortable surface afforded eliminates fatigue while its smoothness speeds up transportation and increases operating efficiency in general.

Bloxonend, made of Southern Pine with the end grain up, presents the toughest wearing surface possible. It comes in 7½-foot lengths with the small blocks dovetailed onto baseboards. On the job, these strips are connected with splines and nails, the result being a compact, durable floor that remains smooth under the most grilling service.

Write nearest office for Architectural Specifications Today

Carter Bloxonend Flooring Co.

H. M. Holway, District Manager

San Francisco: 1007 Hobart Bldg.
Portland, Ore.: Chamber of Commerce Bldg.
Kansas City, Mo.: Long Bldg.
Chicago: 332 So. Michigan Avenue.
Los Angeles: 600 Metropolitan Bldg.
New York: 501 Fifth Avenue.
Cleveland: 1900 Euclid Avenue.
Boston: 312 Broad Exchange.

GLASS

Fuller & Goepp

Manufacturers of

Art and Leaded Glass
MIRRORS

Dealers in *Sani-Onyx* White Glass for Modern Home and Office Fixtures

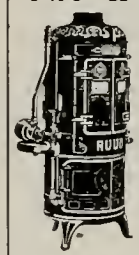
32 Page Street, San Francisco
Market 498

Jackson at 11th, Oakland
Lakeside 7272

OUR OAKLAND PLANT

When writing to Advertisers please mention this magazine.

RUUD HOT WATER
The World's Standard



INSTANTANEOUS
DEPENDABLE
DURABLE
ECONOMICAL

All Automatic Ruud Heaters are double shelled, double fuel controlled and made safe by the Ruud Automatic Thermostat.
Specify, and insist upon the RUUD in all your buildings.

RUUD HEATER CO.
431 Sutter St. San Francisco
Phone Sutter 1640

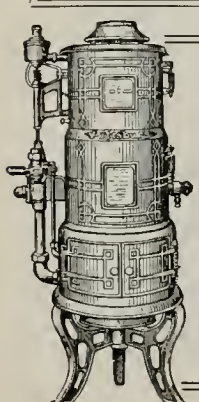
Alvaline, Cementoline
and other
Jones-Duncan Products
MAGNER BROTHERS
PAINT MAKERS
Telephone: Market 113
414-424 Ninth St. San Francisco

HEATING-PLUMBING
COMPLETE PLUMBING AND HEATING SYSTEMS INSTALLED IN ALL CLASSES OF BUILDINGS — ALSO POWER PLANTS
GILLEY-SCHMID CO., Inc.
198 OTIS ST., SAN FRANCISCO
Tel. MARKET 965

THE TORMEY CO.
General
Painters
Phone Franklin
5 - 5 - 9 - 8
1042 Larkin St., San Francisco, Cal.

Phone Sutter 1414
Hunter & Hudson
ENGINEERS
Designers of Heating, Ventilating and Wiring Systems, Mechanical and Electrical Equipment of Buildings
703 Rialto Bldg., San Francisco, Cal.

ELEVATOR ACCESSORIES
We manufacture and install pneumatic elevator door controls and interlocks. (A safety first equipment which has been making good for over ten years.) For information concerning elevator safety and economy we cordially invite you to call
RANDALL CONTROL AND HYDROMETRIC CORPORATION
523 Central Bldg. Los Angeles, Cal. Phone 11901
265A Minna St. San Francisco, Cal. Phone Douglas 2397



Pittsburg
It Insures
Instant
Hot Water
Service
PITTSBURG WATER HEATER COMPANY
478 Sutter S., San Francisco
Phone Sutter 5025

RUSSWIN
BUILDERS' HARDWARE
JOOST BROS., Inc.
SAN FRANCISCO AGENTS
We Carry Complete Stock:
Fishing Tackle—Guns—Mechanics' Tools—Paints—Crockery and Glassware—Stoves—Household Goods. Telephone Market 891.
NO BRANCH STORE
Mazda Lamps Electric Goods

PACIFIC MANUFACTURING COMPANY
MILL WORK, SASH AND DOORS
HARDWOOD INTERIOR TRIM A SPECIALTY
MAIN OFFICE: SANTA CLARA, CALIFORNIA
SAN FRANCISCO, 177 Stevenson Street — LOS ANGELES, 908 Washington Building
OAKLAND, 1001 Franklin Street — SAN JOSE, 16 North First Street

LARSEN-SIEGRIST CO., Inc.
BUILDING CONSTRUCTION
807 Claus Spreckels Building — SAN FRANCISCO

HEATING — PLUMBING
VENTILATION — SHEET METAL WORK
FLOOR AND WALL TILING
SCOTT CO., INC.
243 MINNA STREET — SAN FRANCISCO

VAN EMON ELEVATOR COMPANY
PASSENGER ELEVATORS FREIGHT
1159-65 Howard Street — Market 808 — San Francisco, Calif.

Electric Wiring
Fixtures and Lighting Systems Installed
Motors Installed
A. F. WELLS CO.
Electrical and Mechanical Engineers — Contractors
155 Second St.
San Francisco, Cal.
Douglas 1820
Telephone, Buzzer, and Intercommunicating Systems
Electric Appliances
Estimates Furnished

Res. Tel. Merritt 3600
HERBERT BECKWITH
Building Construction
Formerly with ARTHUR ARLETT — Everson Building OAKLAND

JOHN M. BARTLETT
GENERAL CONTRACTOR
Office 357 - 12th ST. OAKLAND
Phone Lakeside 6750
Res. Phone Berkeley 6884W

For Information on Public Seating *Consult*
WESTERN STATES SEATING COMPANY
133 Kearny Street, San Francisco
2133 Kern Street, Fresno, Calif.
1040 So. Broadway, Los Angeles, Calif.

When writing to Advertisers please mention this magazine.

SCHOOL AND THEATRE EQUIPMENT

FLAGG STUDIOS SAN FRANCISCO LOS ANGELES

DESIGNERS AND MANUFACTURERS

Drop Curtains, Automatic Hoists
Stage Hardware, Scenery

"Hitch Your Desires to Our Experience"

Phone Franklin 548

I. R. KISSEL

Decorator, Painter and Paperhanger

1747 SACRAMENTO ST., Bet. Polk St. and Van Ness Ave., SAN FRANCISCO

ROBERT TROST

PHONE MISSION 2209

General Building Contractor

We Specialize in High Grade Work and Employ Skilled Labor in every Branch of the Building Industry.

26th and Howard Streets
SAN FRANCISCO

Phone Sutter 1533

ALFRED H. VOGT

GENERAL CONTRACTOR CONCRETE CONSTRUCTION

185 Stevenson Street, San Francisco

LAWTON & VEZEY

CONTRACTORS AND BUILDERS

EVERSON BUILDING OAKLAND, CALIFORNIA

MONSON BROS.

Building Construction

Yard
Mariposa and Bryant Streets
Phone Market 2963

251 Kearny Street, San Francisco
Telephone Douglas 6619

JOHN A. PETERSON, President B. HEINRICH, Vice-President

SAN FRANCISCO ELEVATOR CO., Inc.

ELEVATORS

Automatic, Electric, Hydraulic, Belt Power, Automatic Dumbwaiters and Handpower Machines, Push Button Passenger Elevators a Specialty

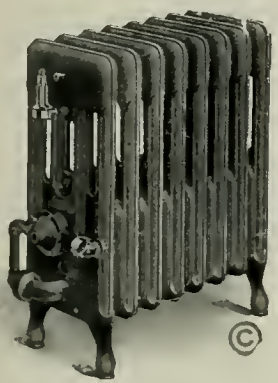
Telephone Kearny 2443 860 FOLSOM STREET, SAN FRANCISCO

HANNAH BROS.

CONTRACTORS AND BUILDERS

142 Sansome Street, San Francisco

Members Builders Exchange Phone Douglas 1577



"Williams Service"

Complete Steam Heating Installation

Employing Clow Gasteam Radiators
in Apartments, Schools, Churches, Residences, Commercial Buildings
Perfect Heat — Automatic Control
No Odor — Normal Humidity

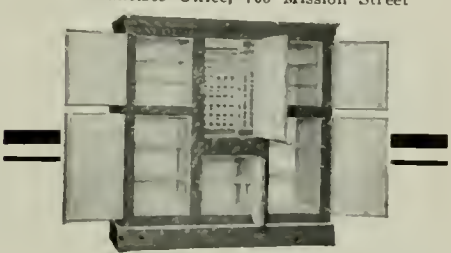
Williams Radiator Company
571 MISSION STREET
Telephone Douglas 8230 SAN FRANCISCO

McCRAY
REFRIGERATORS *for* ALL PURPOSES

Send a sketch of your client's requirements and McCray engineers will gladly submit, without obligation, plans for specially built refrigeration equipment to meet particular needs. We carry in stock, for prompt shipment, refrigerators of all sizes and types.
Get the latest McCray catalogs for your files.

No. 95—for Residences
No. 72—for Grocers
No. 64—for Markets
No. 75—for Florists
No. 53—for Hotels and Institutions

McCRAY REFRIGERATOR CO.
2363 LAKE STREET
KENDALLVILLE, IND.
San Francisco Office, 765 Mission Street



For large residences

"I Didn't Know You Could Do That"

This exclamation is often heard after our representative has shown a typist how to accomplish some desired result on the

L. C. Smith & Bros. Typewriter

There are so many things about this machine that add to the quality and quantity of work of an operator that we want to tell you about them. Ask for the illustrated chart-folder, No. 601, or for the booklet, "The Silent Smith."

L. C. Smith & Bros. Typewriter Co.
Executive Offices SYRACUSE, N.Y

Specify **ROBERTSON VENTILATORS**

The Robertson Ventilator has only six parts—(1) Stack, (2) Stack Louver, (3) Robertson Wind Baffle, (4) Louver Ring, (5) Caps, and (6) Suction Band. All parts are strongly fastened and are scientifically placed to secure maximum ventilating efficiency. There is nothing that requires adjustment, inspection or maintenance.

Made of Robertson Process Asbestos Protected Metal

Send for descriptive pamphlet and price list

H. H. ROBERTSON CO.
H. M. HOLWAY, District Manager
1007 Hobart Building, San Francisco
Metropolitan Building, Los Angeles

I. M. SOMMER & CO.
ENGINEERS AND GENERAL CONTRACTORS
CONCRETE CONSTRUCTION
Phone Hemlock 1100
901 BRYANT ST., SAN FRANCISCO

K. E. PARKER COMPANY, Inc.
GENERAL CONTRACTORS
Phone Sutter 5661
Room 515 Clunie Building, SAN FRANCISCO

R. W. LITTLEFIELD
Building Construction
357 12th Street, Room 9, Oakland, Cal.
Phone Lakeside 6750

H. H. HILP, Jr.
J. FRANK BARRETT
BARRETT & HILP
CONCRETE CONSTRUCTION BUILDERS GENERAL CONTRACTORS
918 HARRISON STREET, near 5th, SAN FRANCISCO
Telephone DOUGLAS 700

CAEN STONE
A refined, elegant, interior finish.
A. KNOWLES
CONTRACTOR AND PLASTERER
442 Call-Post Building
San Francisco

STEELFORMS Signify ECONOMY, RAPIDITY, and EFFICIENCY
STEELFORM CONTRACTING COMPANY
STEELFORMS FOR CONCRETE BUILDINGS
C. B. Hopkins, C. E., Manager
681 Market Street, San Francisco
CONCRETE JOIST FLOOR CONSTRUCTION

Phone Piedmont 2079W
DAVID NORDSTROM
GENERAL CONTRACTOR
4146 Emerald Street, Oakland

M. E. VUKICEVICH
SPENCER B. BAGGE
VUKICEVICH & BAGGE
GENERAL CONTRACTORS
Phone Sutter 6700
Office, Builders Exchange, 180 Jessie St., San Francisco

When writing to Advertisers please mention this magazine.

432 Bryant St.
SAN FRANCISCO
Douglas 2676

Standard Fence Co.
WIRE AND IRON WORKS

60th and Lowell Sts.
OAKLAND
Tel. Piedmont 646

DESIGNERS—BUILDERS
HOME AND ESTATE FENCE
AVIARY and TENNIS COURT FENCE
WIRE GRILL WORK—WIRE SCREEN
FLEXIBLE WIRE CONVEYOR BELT
WIRE SPECIALTIES
1922 Santa Fe Avenue, Los Angeles, Cal. Phone 67188

Steel Bars
FOR CONCRETE REINFORCEMENT
Cut to Length, Fabricated, Installed
Tel. Douglas 3466
BADT-FALK & CO.
346 Call-Post Bldg., 74 New Montgomery St., San Francisco

FLOWERING EUCALYPTUS
The Flaming Gum Tree of Australia (Eucalyptus Fecifolio)
A mass of flame-colored bloom through the summer months
LIMITED SUPPLY OF SMALL TREES FOR SALE FOR FALL AND SPRING PLANTING
A. K. Wallis
Telephone Berkeley 671-N 2628 Shattuck Ave. Berkeley, Calif.

PACIFIC DEPARTMENT
GLOBE INDEMNITY COMPANY
Bonds and Casualty Insurance for Contractors
FRANK M. HALL, formerly Robertson & Hall, Mgr.
444 California Street Phone Sutter 2280 SAN FRANCISCO

CARL H. PETERSON
BUILDER
PHONE DOUGLAS 1876 185 STEVENSON STREET SAN FRANCISCO

PHONE DOUGLAS 2370
R. McLERAN & CO.
GENERAL CONTRACTORS
HEARST BUILDING SAN FRANCISCO, CAL.

D. ZELINSKY & SONS
PAINTERS AND DECORATORS
165 GROVE STREET SAN FRANCISCO

SPENCER ELEVATOR COMPANY SAN FRANCISCO CAL. W WESTINGHOUSE EQUIPMENT
Passenger and Freight Elevators
For Every Service
SPENCER ELEVATOR COMPANY
166-180 Seventh Street San Francisco

TEMPERATURE REGULATION
JOHNSON SERVICE COMPANY
Manufacturers and Installers of JOHNSON Heat Humidity CONTROL
For schools, residences, hospitals, banks, public buildings, also canneries and all kinds of industrial plants—Hot water tank regulators, air and water reducing valves.
Rialto Bldg., SAN FRANCISCO; 605 Van Nuys Bldg., LOS ANGELES

Atlas Heating and Ventilating Co., Inc.
ENGINEERS and CONTRACTORS
STEAM AND HOT WATER HEATING, FANS, BLOWERS
FURNACES, POWER PLANTS—SHEET METAL WORK
Phone Douglas 378 Fourth and Freelon Sts., Bet. Bryant & Brannan, SAN FRANCISCO

CLARENCE DRUCKER HERMAN LAWSON
LAWSON & DRUCKER
PLUMBING—HEATING—CONTRACTORS
450 HAYES STREET
TELEPHONE MARKET 275 SAN FRANCISCO, CAL.

H. G. NEWMAN CO.
PLUMBING HEATING
OAKLAND 3329 2004 TELEGRAPH AVENUE OAKLAND

ALEX COLEMAN
CONTRACTING PLUMBER
706 ELLIS STREET, SAN FRANCISCO Phone FRANKLIN 1006

WM. F. WILSON COMPANY
MODERN SANITARY APPLIANCES
Special Systems of Plumbing for Residences, Hotels, Schools, Colleges, Office Buildings, Etc.
Phone Sutter 357 328-330 Mason Street, San Francisco

W. H. PICARD
Plumbing, Heating, Ventilating and Power Plants
5656 College Avenue
5662 Keith Avenue
Piedmont 7522 Oakland, Calif.

CARL T. DOELL
PLUMBING HEATING
467 21st Street, Oakland, California Telephone Oakland 3524

Specify
LOWELL
Rubber Covered
WIRE

LOWELL INSULATED WIRE CO.
LOWELL, MASS.

LAMP CORDS
AND CABLE

Inspection Tag on Every Coil

PITTSBURGH
MIRRORED
REFLECTORS

For Show Windows and Special Lighting

GUARANTEED for 5 years
The Efficient Lighting Reflector

Best By Test

CONNECTICUT
Telephones and Annunciators

For Apartment Houses, Schools, Banks, Public Buildings, Hotels, Etc.

Have given satisfaction for the past 28 years

Let us solve your Interior Telephone Problems

Special attention given the Architects Electrical Problems.
We will gladly assist in preparation of layouts.

MYERS & SCHWARTZ
MANUFACTURERS AGENTS

90 New Montgomery Street
and
Furniture Exchange
San Francisco

1119 So. Los Angeles St.
Los Angeles
1626 Eighth Avenue
Seattle, Wash.

An ornament to any municipal park, school, or childrens' playground.

The Haws Vitreous China Pedestal (Model 12) Sanitary Drinking Fountain

Haws Sanitary Drinking Faucet Co.
1808 Harmon Street, Berkeley

RETARDO

— preserves the surface
— protects against fire
— beautifies

RETARDO is manufactured in all colors and for all purposes. It is endorsed and recommended by Fire Departments and Fire Prevention Bureaus. RETARDO costs no more than ordinary paint, but does more work.

Send for color chart and further information

Fire Retardent Products Co.
2838 Hannah Street Oakland, Calif.

FIRE PREVENTATIVE PAINT

ACORN HARDWOOD FLOORS

Architects and Builders specify and recommend

"Acorn Brand" Oak Flooring

knowing that the manufacturer and distributor will guarantee client satisfaction

Strable Hardwood Co.
HARDWOOD LUMBER
511-545 First St., Oakland, Calif.
Phone Oakland 245

Formal Garden Effects may be obtained on your Country Estate within a period of two to three years.

MacRORIE-McLAREN CO.
LANDSCAPE ENGINEERS
and General Nurserymen
514-16 Phelan Bldg., San Francisco
Nurseries at Beresford

ST. FRANCIS DE SALES SCHOOL, OAKLAND
Jas. W. Plachek, *Architect* J. J. Power, *Contractor*

Another Universal Window Installation

UNIVERSALS—so frictionless and so perfectly balanced that a child can operate them—afford at will 1% to 100% ventilation, open and close singly or in combination, are individually fitted with shades that eliminate awnings entirely, and can be easily and safely cleaned from the inside. They constitute a distinct advance in scientific window construction, giving perfect air and light control and in many cases making a mechanical ventilating system superfluous.

"Look us up in Sweet's" 17th edition, pages 1298 and 1299
VISIT OUR EXHIBIT AT 77 O'FARRELL ST., S. F.

UNIVERSAL
SALES COMPANY

GENERAL SALES OFFICE
1916 BROADWAY, OAKLAND
PHONE, OAKLAND 891

BRANCHES:
Pittsburgh, Penn. *Los Angeles, Cal.*
San Francisco, Cal. *Portland, Oregon*

S. & S. TILE CO.

MANUFACTURERS OF
HAND-MADE TILES FOR WALLS AND FLOORS. REPRODUCTIONS OF OLD SPANISH AND MOORISH GLAZED TILES
Factory, 4th and Carrie Sts. San Jose, Cal.

JAS. I. KRUEGER

Representing
Illinois Engineering Company, Chicago
Eureka Brass Works, Cincinnati
Manufacturers of
Vacuum and Vapor Steam Heating Materials, Power Plant Equipment
Standard Radiator and Gate Valves, Pumps for Vacuum Systems of Heating
557-559 Pacific Building, San Francisco Telephone Sutter 7057

CHARLES T. PHILLIPS COMPANY

CONSULTING ENGINEERS
HEATING, VENTILATING, ELECTRIC WIRING, PLUMBING
Roberts Building, Los Angeles

CYCLOPS IRON WORKS

ICE MAKING and REFRIGERATING MACHINERY, TRAVELING CRANES
Office and Works: 837-847 FOLSOM ST. SAN FRANCISCO, CAL. Telephone: SUTTER 3030

GRINNELL AUTOMATIC SPRINKLER

GRINNELL COMPANY
OF THE PACIFIC
VALVES PIPE and FITTINGS
ENGINEERS AND CONTRACTORS
453 Mission Street, San Francisco
CHEMICAL FIRE EXTINGUISHERS and FIRE ENGINES

Fire Protection Engineering Company

ENGINEERS AND CONTRACTORS
Automatic Sprinkler Systems
Automatic Fire Alarm Systems
Watchman Detector Systems
Executive Offices and Factory
67 MAIN STREET
San Francisco, California
Chemical Engines
Hand Fire Extinguishers
Motor Driven Fire Apparatus

CLINTON CONSTRUCTION COMPANY

of California
BUILDERS AND MANAGERS OF CONSTRUCTION
923 Folsom Street San Francisco

RADIATOR AIR VALVES

Traps, Rapid Riser Vents, Vacuum and Condensation Pumps
They Are Absolutely Guaranteed
JAS. P. MARSH & CO., Represented by HULTING, HURST & HULTING
Monadnock Building (Telephone Sutter 5295), San Francisco, Cal.

When writing to Advertisers please mention this magazine.

FEDERAL LAND BANK, BERKELEY

James W. Plachek, Architect

WIRED COMPLETELY *by*

Other Recent Contracts:

Pacific Gas & Electric Building, Oakland

Lockwood, Jr., High School Building, Oakland

Carquinez High School Building, Crockett

Power House and Laundry, Alameda County Hospital

KING'S ELECTRICAL CO.

BUILDERS' EXCHANGE, OAKLAND

Office Phone: Piedmont 391

House at Cornwall-on-Hudson, N. Y. Finished with Old Virginia White. Rogers & Zogbaum, Architects, New York

Cabot's Old Virginia White

A Soft, Brilliant White for Shingles, Siding and Similar Woodwork. As Bright and Clean as New Whitewash, and as lasting as Paint.

Architects and others have tried for years to get a paint that would give the same beautiful, brilliant white as new whitewash, and would also be durable and clean and not rub off like whitewash. But paint was always "painty"—hard, cold and heavy. Old Virginia White is a shingle-stain compound that has solved the problem. It is as clean, cool and brilliant as fresh whitewash, and as lasting as paint; but it is not messy like whitewash, nor painty like paint, although it costs less and goes farther than paint.

Send for Sample Shingle and Circular showing other fine houses finished with Old Virginia White

SAMUEL CABOT, Inc., Mfg. Chemists, Boston, Mass.

Cabot's Creosote Stains, Stucco and Brick Stains, "Quilt," Mortar Colors, Dampproofing, Waterproofing, Conservo Wood Preservative, etc.

Pacific Materials Co., San Francisco
Waterhouse-Wilcox Pacific Co., Los Angeles
Theo. F. Snyder, San Diego, Cal.
S. W. R. Dally, Seattle
Cress & Co., Portland
H. G. Lanahan & Co., Spokane, Wash.

CALIFORNIA ARTISTIC METAL & WIRE CO.
J. T. McCORMICK, PRESIDENT
ORNAMENTAL IRON AND BRONZE
349-365 SEVENTH ST. SAN FRANCISCO

MORTENSON CONSTRUCTION CO.
CONTRACTORS FOR STRUCTURAL STEEL AND IRON
H. MORTENSON, President
Office and Shops: Corner 19th and Indiana Streets
Phone: Mission 5033 SAN FRANCISCO, CAL.

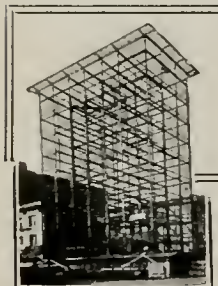
JUDSON MANUFACTURING COMPANY
Main Office:
817-821 FOLSOM STREET
Telephone Sutter 6820
SAN FRANCISCO
Structural Steel and Iron Work
Works:
OAKLAND—EMERYVILLE
CALIFORNIA
C. C. SAUTER, Chief Engineer

Federal Ornamental Iron & Bronze Co.
Bank Counter Screens and Grille Work Our Specialty
Most Modern Equipment Throughout
Recent Contracts: BANK OF ITALY, FIRST NATIONAL BANK
16th Street and San Bruno Avenue, San Francisco Phone Market 1011

HERRICK IRON WORKS
STRUCTURAL STEEL
Office and Works, 18th and Campbell Streets
Oakland, Cal. Phone Lakeside 1460

Telephone Mission 58 A. A. DEVOTO, President
CENTRAL IRON WORKS, Inc.
STRUCTURAL STEEL
Office 2050 BRYANT STREET SAN FRANCISCO, CAL.

C. F. HOFFMAN L. W. FLIEGNER
Golden Gate Iron Works
STRUCTURAL STEEL AND ORNAMENTAL IRON CONTRACTORS
Howard and 11th Streets San Francisco



SCHRADER IRON WORKS, Inc.
STRUCTURAL STEEL CONTRACTORS
Fire Escapes, Waterproof Trap Doors, Ornamental Iron Work
1247-1249 HARRISON STREET SAN FRANCISCO, CAL.
Bet. 8th and 9th Telephone Market 337

When writing to Advertisers please mention this magazine.

for beauty-

Tropico Tiles

TROPICO QUARRY TILES in red and buff shades are a distinctive and durable floor material.

TROPICO FAIENCE TILES in a variety of dull glazes and textures are the ideal materials for mantels, sun-rooms, bathrooms, and all interior and exterior decorative treatment where tiles of permanent, soft coloring are desired.

Sold by all tile dealers.

Look for the name TROPICO on your tiles.

TROPICO POTTERIES Inc.
GLENDALE – CALIFORNIA

THE HEART OF A BUILDING IS ITS PIPING EQUIPMENT

A complete line for the Piping Features of Buildings — Power, Plumbing, Heating, Ventilating, Refrigerating, Vacuum-Cleaning, Gas, Water, etc.—is furnished by Crane Co. through the Plumbing and Heating trade.

The Architect, Engineer and Builder, or Investor, may enjoy, through the facilities of this Company, the distinct advantage of dealing entirely with one Competent and Responsible House.

Exhibit Rooms, Offices and Warehouses in San Francisco and Oakland and Fifty-one other cities.

CRANE CO.

1855—1918

VALVES and FITTINGS

Genuine Hyloplate Blackboards
Best Pennsylvania Slate Blackboards
School Furniture
Western Venetian Blinds
Lockers

C. F. WEBER & CO.

San Francisco
Los Angeles
Reno
Phoenix

The GOLD MEDAL MAIL CHUTE

INSTALLED IN THE NEW SAN FRANCISCO CITY HALL AND THE WHITE MARBLE MERRITT BUILDING LOS ANGELES

Given highest award at Panama-Pacific International Exposition 1915

Waterhouse-Wilcox Co.
California Representatives

523 MARKET Street
SAN FRANCISCO

331 E. 4TH STREET
LOS ANGELES

F. T. CROWE & CO.
Seattle, Wash.

The J. McCracken Co.
Portland, Ore.

American Mailing Device Corporation

BUTTE ELECTRIC AND MFG. CO.

PAUL BUTTE, Owner

HIGH GRADE ELECTRICAL INSTALLATIONS

FEDERAL ELECTRIC BANK PROTECTION SYSTEMS

DOUGLAS 145 534 Folsom Street San Francisco

H. S. TITTLE

CONTRACTING ELECTRICAL ENGINEER

766 FOLSOM ST., SAN FRANCISCO Phone SUTTER 4278

To Be "Low Bidder" Not Always Our Aim

"QUALITY AND SERVICE ALWAYS"

Our nation-wide organization and large experience in this field assure you always of fair estimates and absolute satisfaction. Electrical Appliances

F. E. NEWBERY ELECTRIC CO.

Alta Building, 381 Bush Street, San Francisco Phone Sutter 6361

San Francisco, Cal. Oakland, Cal. Los Angeles, Cal.

NE PAGE, McKENNY CO.

Electrical Engineers and Contractors

Phone Sutter 2369 589 Howard St., San Francisco, Cal.

BERKELEY ELECTRICAL COMPANY

ELECTRICAL CONTRACTORS—FIXTURES

2142 Center St. PHONE BERKELEY 8747 Berkeley, Calif.

AUTOMATIC ELECTRIC CO.

PAX—Private Automatic Telephone Exchanges. We have just installed a complete system in new Standard Oil Building. Ask for our engineer to call.

DIRECT LINE TELEPHONE CO., *Agents*

37 CALIFORNIA ST. Telephone Douglas 722 SAN FRANCISCO

PACIFIC ELECTRIC CLOCK CO.

J. J. Estabrook

Manufacturers and distributors of Electric Clock Systems and Time Keeping Devices for Schools, Public and Private Buildings. Plans and Specifications prepared by competent engineers without charge.

86 THIRD STREET
SAN FRANCISCO, CALIF.

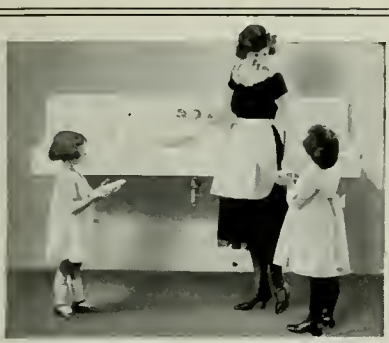
Browne-Langlais Electrical Construction Co.

Agents for

ROBBINS and MYERS MOTORS, PACKARD MAZDA LAMPS

313 FIFTH STREET, SAN FRANCISCO

Telephone Douglas 976



1828—MOTT—1922

Architects and their clients are invited to visit our show rooms, 553-555 Mission St. San Francisco, D. H. Gulick, manager.

Los Angeles Office—721 Central Bldg.

MOTT COMPANY
of California

Telephone Douglas 2046 Charles Felix Butte

Butte Elec. Equipment Co.

Trade Mark BEECO Registered

ELECTRICAL
CONTRACTORS AND ENGINEERS

530 FOLSOM STREET SAN FRANCISCO

L. SIEBERT DESIGNERS AND MANUFACTURERS OF J. GENSLER

SWITCH BOARDS · PANEL BOARDS
PROTECTIVE POWER PANELS

Drendell Electrical and Mfg. Co.

DEMCO

1345-47
HOWARD STREET

SAN FRANCISCO,
CALIF.

PHONES
MARKET 1753
1754

MUELLER

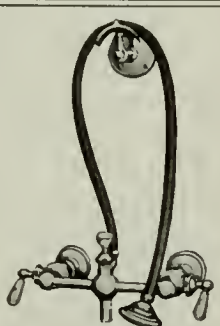
Faucets give full value in wear and service.

The MUELLER COMBINATION SINK FAUCET is especially desirable—Hot, Cold or Tempered water through spout or spray?

THE NEWEST AND BEST THING IN FAUCETS

H. MUELLER MFG. CO.

635 MISSION STREET SAN FRANCISCO, CALIF.



When writing to Advertisers please mention this magazine.

MILLER FOLDING IRONING BOARD

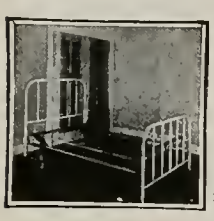
ELIMINATES WALL CABINET—IS INSTALLED IN KITCHEN CUPBOARD

NO { PLASTER GROUNDS / CASING OR PAINTING

SAVES { WALL SPACE AND LABOR / TIME AND MATERIAL

Exhibited and sold by { LANNOM BROS. MFG. CO / 362 Magnolia St., Oakland, Calif.

Send for Catalogue to { W. N. MILLER / 844 Thirteenth St., Oakland



Specify —"PERFECTION" WALL BEDS

YOUR CLIENT WILL CERTAINLY APPROVE

Write for our Specifications, Prices, Etc.

LEVERETT T. SPAULDING, 1041 MISSION STREET

Telephone Market 8405 San Francisco

A. C. SCHINDLER, President CHAS. F. STAUFFACHER, Secretary

THE FINK & SCHINDLER CO.

Manufacturers of INTERIOR WOODWORK AND FIXTURES
BANK, OFFICE AND STORE FITTINGS
SPECIAL FURNITURE

218-228 THIRTEENTH STREET Bet. Mission and Howard Sts. SAN FRANCISCO, CAL. Telephone Market 474

QUALITY **ARISTO PAINTING CO.** RELIABILITY

SPRAY PAINTING

COMMERCIAL AND INDUSTRIAL PAINTERS

Phone Douglas 4779 39 Tehama Street, San Francisco Roofs Repaired

ERNEST HELD, General Manager

HOME MANUFACTURING CO.

BANK, STORE AND OFFICE FITTINGS
FURNITURE AND HARDWOOD INTERIORS
CABINET WORK OF EVERY DESCRIPTION

543 and 545 BRANNAN ST. Phone Kearny 1514 San Francisco, Cal.

Mullen Manufacturing Co.

BANK, STORE AND OFICE FIXTURES—CABINET WORK OF GUARANTEED QUALITY—CHURCH SEATING

Telephone Market 8692 Office and Factory: 64 Rausch St., Bet. 7th and 8th Sts. San Francisco

JAMES L. McLAUGHLIN

GENERAL CONTRACTOR

Phones Douglas 6645—6646 251 KEARNY STREET, SAN FRANCISCO

Dolan Wrecking & Construction Co.

(D. J. DOLAN)

Lumber, Lath, Nails, Shingles, Doors, Windows
and Plumbing Supplies, New and Second Hand

Phone Market 4264 Office and Yard, 1607-1639 MARKET ST., SAN FRANCISCO

DUROPLATE BLACKBOARD

Is the Best Wood Pulp Composition Blackboard, will not warp or peel or shine. Send for a sample. Test it. Break its corners. Whittle it. You will be convinced. Deep blue black or dark green.

Wentworth & Co.

39 SECOND ST., SAN FRANCISCO
School, Bank, Library and Office Furniture
San Francisco Oakland
Los Angeles Portland Seattle

Carey
BUILT-UP ROOFING

Pipe and Boiler Coverings
Asbestos Roofing
Elastite Expansion Joints
Carey Fibre Roof Coating
Asfaltslate Shingles
JONES BROTHERS ASBESTOS SUPPLY COMPANY, INC.
512 Second Street, San Francisco
Telephone, Garfield 156

WIRING

CONTRACTORS **CENTRAL ELECTRIC CO.** AND DEALERS

177-179 Minna Street, San Francisco
Phone Douglas 4832

A BETTER IRON **TONCAN METAL**

Phone Douglas 3775

United Alloy Steel Corporation
CANTON, OHIO

Black Galvanized and Blue Annealed Sheet

WESTERN SALES OFFICES
Santa Fe Building, San Francisco
LOS ANGELES 528 Title Insurance Bldg.
PORTLAND 301 Henry Building

REMILLARD BRICK CO.
Est. 1869
Manufacturers
COMMON BRICK
332 Phelan Building
San Francisco, Calif.
Plants: San Jose, Pleasanton

The Fidelity and Casualty Company of New York
CASUALTY INSURANCE and SURETY BONDS
California Office
Balfour Building San Francisco
Assets, $27,000,000; Surplus, $7,000,000

JOHNS-MANVILLE, Inc.
of California
SERVICE TO ARCHITECTS
Architectural Acoustics and Sound-Proofing, "Colorblende" Asbestos Shingles, Asbestos Prepared Roofings, Asbestos Built-up Roofings, Mastic Industrial Flooring, Keystone Hair Insulating and Sound-Deadening.

JOHNS-MANVILLE SERVICE COVERS THE CONTINENT

JOHNS-MANVILLE, Inc.
of California
DISPLAY ROOM
500 POST STREET
San Francisco

"BLAZING" THE TRAIL

We've been doing it for many years—giving the Sportsman Better Value for Quality than he ever before received. "Value at a Fair Prire" in everything for the Sportsman.

The Ellery Arms Company
583-85 MARKET ST
SAN FRANCISCO, CAL.

SEND FOR CATALOG *The Sign of Quality*

OPEN HEARTH
REINFORCING STEEL BARS

Square Deformed—Immediate Shipment—Cut to required lengths

PACIFIC COAST STEEL COMPANY
Sales Office, Rialto Building SAN FRANCISCO Phone Sutter 1564

SAFETY RELIABILITY ECONOMY
The three dominant factors in specifying elevators

Pacific Elevators are always safe, and the many installations is proof of their reliability. Alternating current driven elevators are fully as satisfactory as direct current driven machines for high-speed installations, and the cost of power and upkeep is much lower.

Estimates Cheerfully Given

Pacific Elevator & Equipment Company
1129-31 HOWARD STREET SAN FRANCISCO, CALIF.
MANUFACTURERS OF A. C. & D. C. ELEVATORS—PASSENGER OR FREIGHT

A Permanent Exhibition of Architects' Samples

Universal

Visit Our Showrooms

PHONE DOUGLAS 93

MONADNOCK BUILDING
681 Market Street

Building Materials, Engineering Equipment Specialties

Exhibits

Plan to Display Your Products

SAN FRANCISCO, CALIF.

JOHN TRAYNOR CHARLES HARCOURT

OCEAN SHORE IRON WORKS

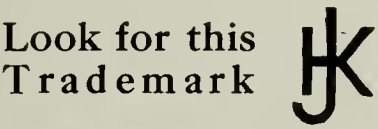
Manufacturers of
BOILERS, STEEL TANKS, STEEL PLATE SPECIALTIES

Dealers in
BOILERS, TANKS, PUMPS, ENGINES
GENERAL MACHINERY, ETC.

Office and Works:
550-558 EIGHTH STREET

Phones Market 462 and 463
SAN FRANCISCO, CAL.

Look for this Trademark



And if it's there don't worry any more about your Valves and Fittings

Specify and insist upon having

The Kelly & Jones Co. Valves and Fittings

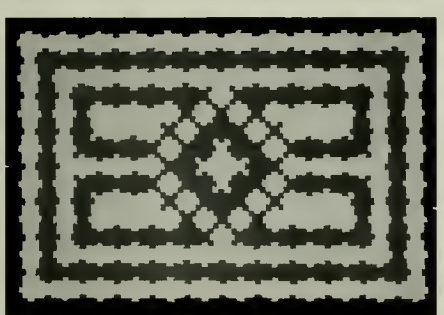
Byers Genuine Wrought Iron Pipe

Republic Steel Pipe

Complete Line of Plumbing Supplies
Large Stocks for Prompt Delivery
Catalogue on request

California Steam & Plumbing Supply Co.

671-679 Fifth Street, Corner Bluxome
SAN FRANCISCO CALIFORNIA



INTERLOCKING RUBBER TILING

The Elevator Floor

whether in Office Building, Hotel or Department Store, is subjected to a great deal of wear and tear.

—SPECIFY—

INTERLOCKING RUBBER TILING

and you've provided your client's building with a Durable, Economical, Practical material that is sure to give satisfaction. Twenty tons installed in the Standard Oil Building, San Francisco.

Stock on hand for immediate delivery.

NEW YORK BELTING AND PACKING CO.

NEW YORK

San Francisco Branch 519 MISSION ST. Phone Douglas 1837

Small booklet of designs mailed on request

VIEW AT NILES PLANT

CRUSHED ROCK
GRAVEL **For Building and Road Construction**
SAND **COAST ROCK AND GRAVEL CO.**
500 Call Building SAN FRANCISCO Phone Sutter 3990
Plants at Nilea, Fair Oaka, Oroville, Eliot, Piedra, Solo, and Marysville

THE WORLD'S WORD FOR ELEVATOR SAFETY

The Architect who specifies OTIS ELEVATORS may do so with the assurance that the responsibility of the Otis Elevator Company extends beyond satisfactory installation. Buildings equipped with OTIS ELEVATORS enjoy the advantage of prompt service and careful inspection rendered by over a hundred Otis offices.

OTIS ELEVATOR COMPANY
2300 STOCKTON ST. SAN FRANCISCO
OFFICES IN ALL PRINCIPAL CITIES

IT'S ODD! how one forgets

Combinntion Soap Holder and Safety Grip

Tumbler Holder

Sponge Holder

The value of knowing the connection between apparently unrelated facts

MOST of us seem to have learned a large number of facts that eventually get all jumbled up in our minds like a Piggly Wiggly puzzle. It's only when someone points out the relation of one to another that we recall we ever knew them.

So it is with our knowledge of tile and china. We all know that tile bathroom walls are the finest and the best that can be installed at a reasonable price. But when it comes to installing built-in tile fixtures, we run into a different problem.

We know that tile is porous and will craze eventually, despite all our efforts. This doesn't matter much about the walls, as very little foreign matter actually comes in contact with them. But it does matter with built-in fixtures. Here the cracks in the surface make trouble. Soap particles and other foreign matter are absorbed, causing discoloration and shabby appearance. We also know that solid, close-textured china will not crack or discolor.

Recalling these facts in relation to each other, it is easy to see that for built-in bathroom fixture purposes it is better to use solid snow-white Fairfacts China Fixtures and to use tile only where it is best suited—that is, for bathroom walls. Fairfacts Fixtures are installed by tile contractors—the only trade that does this work, and should be included in the tile contract. We do not sell the plumbing trade.

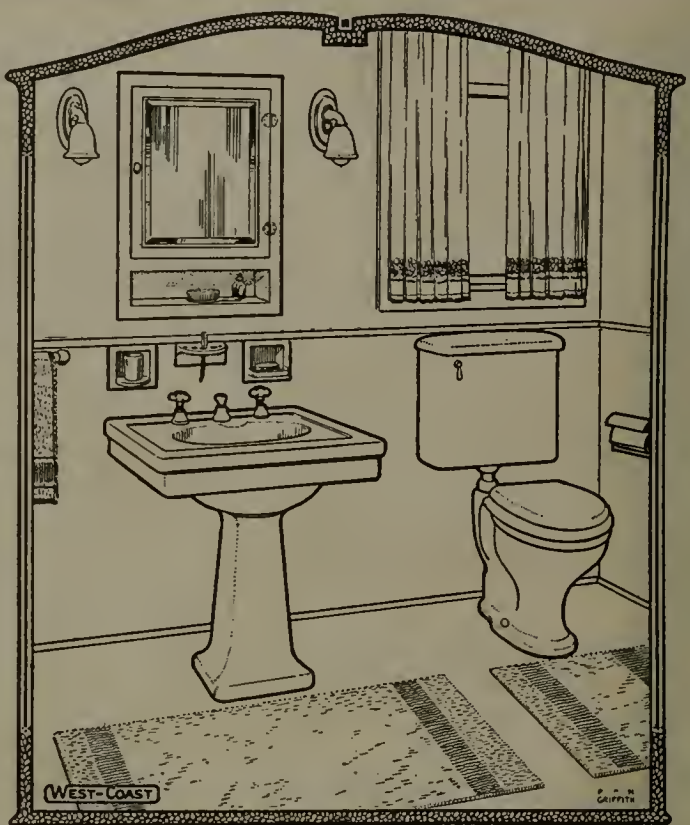
Send for Catalogue F. Details and Specifications also appear in Sweet's Architectural Catalogue.

THE FAIRFACTS COMPANY, INC.
234-236 West 14th Street, New York City
Dept. E

(Look for this BATHROOM Fairfacts FIXTURES *Trade Mark)*

Fairfacts Fixtures

BUILT IN YOUR BATHROOM WALLS



"West Coast" Two-Fired Vitreous China Pedestal Lavatory, Closet and Tank

The "West Coast" Label Protects Your Clients

Plumbing fixtures of high quality cost your clients no more for installation, but they assure greater efficiency in operation and lower maintenance costs.

The "West Coast" label on plumbing fixtures is the manufacturer's guarantee of quality in materials, design, construction and finish.

WEST COAST Porcelain Manufacturers

Wells Fargo Building, San Francisco

Plant, Millbrae, California

SAN FRANCISCO
PUBLIC LIBRARY

The ARCHITECT & ENGINEER

SEPTEMBER 1923

Published in San Francisco
50 cents a copy - $2.50 a year

The World's best Made in the West

TRADE MARK REGISTERED

PACIFIC

PLUMBING FIXTURES

Pacific Sanitary Manufacturing Co.

Main Office: 67 New Montgomery St., San Francisco

Factories: Richmond and San Pablo, California

Guaranteed Watertight for 10 and 20 years

PABCO

10 and 20 Year Roofs

outlive their guarantee because of the quality of

FLOATINE

The improved roof asphalt which will not run, soften, leak or slide

The PARAFFINE COMPANIES, Inc.

TRADE MARK
PABCO PRODUCTS

A $12,000,000 Corporation Operating 17 Plants on the Pacific Coast

San Diego · Los Angeles · San Francisco
Oakland · Portland · Seattle

Curtiss Apartments
525 Kalmia St., San Diego, Cal.
Architects—Stannard & Lehman

This Beautiful Finish Waterproofs Cement and Stucco

HERE is a coating that serves a treble purpose: Bay State Brick and Cement Coating beautifies, preserves and weather-proofs cement and stucco walls.

The formula for this master coating is a secret closely kept. That is why leading architects and engineers specify Bay State. They realize Bay State Brick and Cement Coating has no equal.

It puts a beautiful finish on your house that is permanent. It creeps into the pores of the walls and seals them against the severest weather. The hardest rains cannot beat through a coating of Bay State.

Send for samples and booklet to-day.

Wadsworth, Howland & Co. Inc.
BOSTON

New York Philadelphia

Graham Hambly & Son, 1333 East 7th St., Los Angeles, Cal.

James Hambly & Son, 229 Clay St., San Francisco, Cal.

Jones-Moore Paint House, San Diego, Cal.

McCracken-Ripley Building Materials Co., 45 Fourth St., Portland, Oregon.

F. T. Crowe & Co., 508 West Lake Ave., Seattle, Wash.

BAY STATE
Brick and Cement Coating

C. E. Frazer, Architect, Atlanta, Ga.
McGaughey Electric Co., Electrical Contractors, Atlanta, Ga.

Holtzer-Cabot

HOSPITAL SIGNALING SYSTEM

The Piedmont Sanitorium in Atlanta, Ga., is another of the fast-increasing number of modern hospitals equipped with Holtzer-Cabot Signaling Systems.

Fifty years of leadership in the manufacture and development of Hospital Signaling Systems is a protection that the Architect, the Engineer, the Hospital Management and Working Staff cannot conscientiously overlook.

This is why more and more Architects and Engineers are specifying Holtzer-Cabot Systems exclusively.

Architects, Engineers, and Members of Building Boards are invited to write for brochures "Signal Systems for Hospitals" and "Signal Systems for Schools."

Holtzer-Cabot Engineers are at the service of Architects and their clients at all times. Just communicate with our nearest office.

The Holtzer-Cabot Electric Co.

Electric Signaling Systems

Home Office and Factory:
125 ARMORY ST., BOSTON, MASS.

BRANCH OFFICES

Chicago, Ill.: 6161-65 So. State St.
New York, N. Y.: 101 Park Ave.
Philadelphia, Pa.: 807 Otis Bldg.
Detroit, Mich.: 1051 Book Bldg.
Cleveland, Ohio: 517 Union Building
Baltimore, Md.: 1104 Union Trust Bldg.
Minneapolis, Minn.: 627 Metropolitan Life Bldg.
San Francisco, Cal.: Aronson Building. Third and Mission Streets

Better Lighting

New Westinghouse Commercial Lighting Unit Has Many Distinctive Advantages

A new commercial Lighting Unit, known as the Sol-Lux, combining a number of distinctively new features that should appeal to architects, engineers and builders, has just been brought out by the Westinghouse Company. This unit is the result of several years of development work and an exhaustive series of tests.

The Sol-Lux unit is made in both suspension and ceiling types with many special combinations possible. By these variations it can be adapted to meet practically every commercial requirement.

The globe—the principal feature of this unit—is of light density opal glass, with a transmitting efficiency of 82 per cent. Lamps in the unit can be replaced without dismantling.

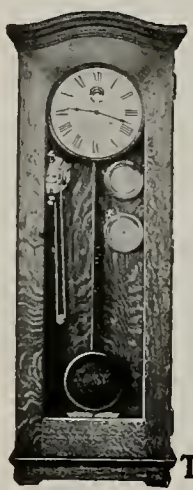
Westinghouse Illuminating Engineers are prepared to co-operate with architects, engineers and contractors on lighting problems. You can reach them through the nearest district office.

WESTINGHOUSE ELECTRIC & MFG. CO.
EAST PITTSBURGH, PA.
District Offices

Denver Los Angeles San Francisco Seattle

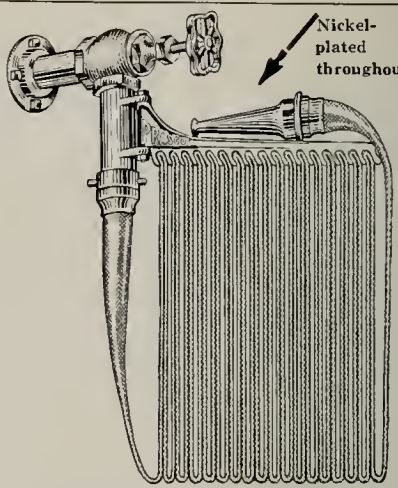
Westinghouse

"Standard"



THIRTY-SIX years' experience manufacturing and installing Electric Time Keeping Systems. Helpful engineering data cheerfully furnished architects, engineers and school boards insuring satisfactory results, and a direct factory branch office completely equipped to render immediate service.

The Standard Electric Time Company
461 Market St., San Francisco, Cal.
Telephone Sutter 241



PRASCO PINLESS
SWINGING HOSE RACK
For 50, 75, 100 ft. Underwriters Unlined Linen Hose
No pins to break, bend, or jam
Hose pays off one loop after the other
Plant Rubber & Asbestos Works
537 Brannan St. San Francisco Tel. Sutter 2100

"CALIFORNIA STUCCO"

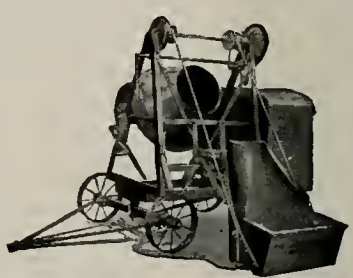
It is a finishing plaster coat made in many beautiful colors, from a true Portland Cement base, which assures everlasting qualities.

"The Stucco which is making California Architecture famous"

For Sale by All Dealers

California Stucco Products Co.
58 SUTTER STREET
1503 S. ALAMEDA ST., LOS ANGELES

JAEGER CONCRETE MIXERS



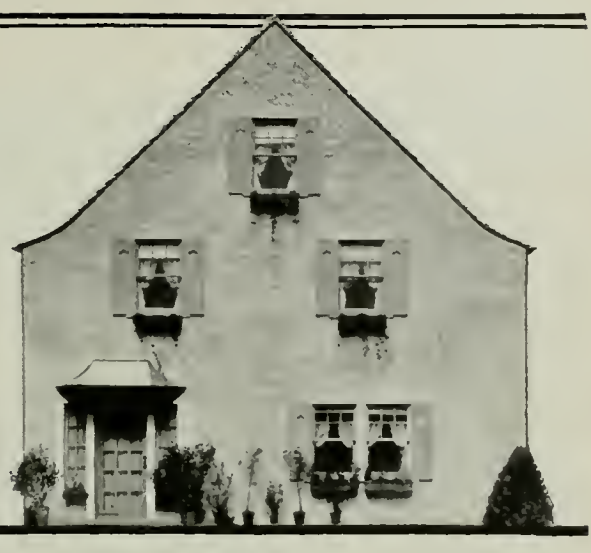
"A MIX A MINUTE"

Not a mere slogan, but an everyday performance.

Write or phone and we will mail you interesting Catalog.

EDWARD R. BACON COMPANY
INCORPORATED
CONSTRUCTION ERBCO EQUIPMENT
FOLSOM at 17TH STS., SAN FRANCISCO
Los Angeles Sacramento Fresno

The Architect and Engineer—September, 1923—Vol. LXXIV, No. 3. Published monthly—$2.50 a year, 627 Foxcroft Building, San Francisco, California. Entered as second-class matter, November 2, 1905, at the Post Office at San Francisco, California, under the act of March 3, 1879.



This house that Bob & Betty built and 100,000 People

MORE than 100,000 people saw the house that Bob and Betty built, the big feature of the recent "Own Your Home" show in New York.

This house was covered with stucco made from ATLAS Portland Cement with ATLAS WHITE Portland Cement for the finish coat. The visitors had an opportunity to see the beauty of the textural finish employed, the method of Portland Cement Stucco construction, and they learned that the house of concrete blocks covered with Portland Cement Stucco costs only about 2% more than the house of entire frame construction, which aroused great interest on the part of prospective home builders and will undoubtedly make many of them want their new home covered with Stucco made with ATLAS WHITE Portland Cement.

On this page is shown a front view of the house and a close-up of the textural finish employed. The variety of textural finishes that can be obtained with the use of ATLAS WHITE is limited only to the ingenuity and artistry of the architect and workman and they can with this material express their own ideas to achieve results that could not be secured with any other material.

And it is worth while remembering that the materials for Portland Cement Stucco with ATLAS WHITE for the finish coat are readily available in any section. There need be no delay in construction while waiting for materials.

Write our Technical Department for specifications or any information you may desire relative to the use of ATLAS WHITE

THE ATLAS PORTLAND CEMENT COMPANY

CHICAGO 25 Broadway, NEW YORK BIRMINGHAM

PHILADELPHIA BOSTON ST. LOUIS DES MOINES
DAYTON OMAHA BUFFALO KANSAS CITY

MAIN ENTRANCE, WOLFSKILL RESIDENCE
Bliss & Faville, *Architects*

Ornamental Iron

Steel Sash

Wire Work

Michel & Pfeffer
Iron Works
HARRISON AND TENTH STREETS
SAN FRANCISCO, CALIF.

TELEPHONE HEMLOCK 3080

Architects' Specification Index

(For Index to Advertisements, see next page)

ASBESTOS MATERIALS
- Johns-Manville Inc., of California, 500 Post street, San Francisco.
- Western Asbestos Magnesia Company, 25 South Park, San Francisco.
- Jones Bros. Asbestos Supply Co., Inc., 512 Second St., San Francisco.
- Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

ART METAL
- Federal Ornamental Iron and Bronze Co., 16th St., and San Bruno Ave., San Francisco.
- Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
- California Artistic Metal & Wire Co., 349 Seventh street, San Francisco.

ARCHITECTURAL TERRA COTTA
- Gladding, McBean & Company, Crocker Bldg., San Francisco.
- Livermore Fire Brick Works, 604 Mission St., San Francisco.
- Tropico Potteries, Inc., Glendale, Cal.

BANK FIXTURES AND INTERIORS
- C. F. Weber & Co., 985 Market St., San Francisco.
- Home Mfg. Co., 543 Brannan St., San Francisco.
- Mullen Manufacturing Co., 64 Rausch St., San Francisco.
- Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.
- The Fink & Schindler Company, 218-13th St., San Francisco.

BANK SCREEN REFLECTORS
- I. P. Frink, Inc., 77 O'Farrell Street, San Francisco.

BATHROOM ACCESSORIES
- The Fairfacts Company, Inc., 234 W. 14th St., New York.

BEDS—WALL
- California Wall Bed Co., 714 Market St., San Francisco.
- Marshall & Stearns Co., Phelan Bldg., San Francisco.
- Leverett T. Spaulding, 1041 Mission St., San Francisco.

BELTING AND PACKING
- New York Belting and Packing Company, 519 Mission St., San Francisco.
- H. N. Cook Belting Co., 401 Howard St., San Francisco.
- Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

BLACKBOARDS
- C. F. Weber & Co., 985 Market St., San Francisco, Los Angeles and Reno, Nevada.
- Stewart Sales Co., 247 Rialto Building, San Francisco.
- Wentworth & Co., 539 Market Street, San Francisco.

BLINDS—VENETIAN AND DIFFUSELITE
- The J. G. Wilson Corporation, 621 North Broadway, Los Angeles.
- Western Blind & Screen Company, factory, Los Angeles; San Francisco representatives, Edward C. Dehn, Hearst Bldg., and C. F. Webber Co.

BOILERS
- Birchfield Boiler Company, Tacoma, Washington. See advertisement for Coast agencies.
- Kewanee Boiler Company, Factory Branch, Exposition Building, San Francisco.
- Kewanee Water Supply System, Simonds Machinery Co., 117 New Montgomery St., San Francisco.
- Main Iron Works, 1000 Sixteenth Street, San Francisco.

BONDS FOR CONTRACTORS
- Bonding Company of America, Kohl Bldg., San Francisco.
- Globe Indemnity Co., 444 California St., San Francisco.
- Fidelity & Casualty Co. of New York, Balfour Bldg., San Francisco.
- Standard Accident Insurance Company, California Commercial Union Building, San Francisco.

BOXBOARD FIBRE SHIPPING CASES
- The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

BRASS GOODS, CASTINGS, ETC.
- H. Mueller Manufacturing Co., 635 Mission St., San Francisco.

BRICK FACE, COMMON, ENAMEL, GLAZED
- Remillard Brick Company, Phelan Building, San Francisco.
- Richmond Pressed Brick Co., Sharon Bldg., San Francisco. Plant at Richmond, Cal.
- Livermore Fire Brick Works and California Brick Co., 604 Mission St., San Francisco.
- United Materials Co., Sharon Bldg., San Francisco.
- Cannon & Co., Sacramento; and 77 O'Farrell St., San Francisco.

BRICK & CEMENT COATING
- Armorite and Concreta, manufactured by W. P. Fuller & Co., all principal Coast cities.
- Minwax Co., Inc., 22 Battery St., San Francisco and 653 S. Clarence St., Los Angeles.
- The Paraffine Companies, Inc., 34 First St., San Francisco.
- R. N. Nason & Co., 151 Potrero Ave., San Francisco.
- Wadsworth, Howland & Co., Inc., Jas. Hambly & Son, 1333 E. 7th St., Los Angeles, and 229 Clay St., San Francisco.

BRICK STAINS
- Samuel Cabot Mfg. Co., Boston, Mass., agencies in San Francisco, Oakland, Los Angeles, Portland, Tacoma and Spokane.
- Armorite and Concreta, manufactured by W. P. Fuller & Co., all principal Coast cities.

BUILT-IN FIXTURES
- Built-In Fixture Company, San Pablo Ave., near Dwight Way, Berkeley, and Hoosier Store, Pacific Building, San Francisco.

BUILDERS' HARDWARE
- Joost Bros., agents for Russell & Erwin Hardware, 1053 Market St., San Francisco.
- The Stanley Works, New Britain, Conn., Coast sales offices, San Francisco, Los Angeles, and Seattle, Wash.
- Palace Hardware Company, Agents Corbin goods, 581 Market St., San Francisco.
- Richards-Wilcox Mfg. Co., Aurora; Ewing-Lewis Co., 626 Underwood Bldg., San Francisco.

RALSTON IRON WORKS, INC.

ESTABLISHED 1876

Office and Works
20th and Indiana Streets
SAN FRANCISCO
Phone Mission 5230

Structural Steel

Representing
Pauly Jail Building Co.

An Index to the Advertisements

	Page
American Face Brick Ass'n.	131
American Mail Chute Co.	157
American Marble & Mosaic Co.	48
American Rolling Mill Co.	43
American Window Glass Co.	129
Aristo Painting Co.	160
Atlas Heating & Ventilating Co.	150
Atlas Portland Cement Co.	5
Babcock Co., C. B.	48
Bacon, Edward R., Co.	4
Badt-Falk & Co.	149
Bartlett, John M.	145
Barrett & Hilp	148
Bass-Hueter Co.	33
Beckwith, Herbert	145
Beeco	159
Berkeley Electric Co.	158
Benjamin Electric Mfg. Co.	134
Birchfield Boiler Co.	40
Browne - Langlais Electric Co.	158
Bowser & Co.	29
Bull Dog Floor Clip Co.	17
Bunting Iron Works	47
Butte Electric & Mfg. Co.	158
Buttonlath Mfg. Co.	34A-121
Cabot, Samuel Co.	141
Cadwallader, Gibson Co.	132
California Artistic Metal & Wire Co.	156
California Steam & Plumbing Supply Co.	163
California Pottery Co.	40
California Stucco Products Co.	4
California Wall Bed Co.	136
Cannon & Company	137
Carter Bloxonend Flooring Co.	143
Central Electric Co.	161
Central Iron Works	156
Clinton Construction Co.	154
Coast Rock and Gravel Co.	168
Cobbledick-Kibbe Glass Co.	120
Coen Company	46
Coleman, Alex	150
Columbia Marble Co.	142
Cook Belting Co.	42
Cook Marble Co.	13
Crane Co.	157
Crittall Casement Window Co.	39
Cyclops Iron Works	154
Del Monte Properties Co.	140
Detroit Steel Products Co.	24
Dierrsen Co., C.	24
Direct Line Telephone Co.	158
Doell, Carl T.	150
Dolan Wrecking Co.	160
Drendell Electric Co.	159
Electric Appliance Company	14
Elevator Supplies Co., Inc.	141
Ellery Arms Co.	161
Evans, W. L.	44
Federal Ornamental Iron Works	156
Fess System Co.	46
Fidelity & Casualty Co.	161
Fink & Schindler	160
Fire Protection Corp.	161
Fire Protection Eng. Co.	154
Fire Retardent Products Co.	152
Flagg, Edwin H. Scenic Co.	146
Frink, I. P., Inc.	134
Fuller & Goepp	143
Fuller, W. P. & Co.	28
Garnett Young & Co.	14
General Fireproofing Co.	31
Gilley-Schmid Co.	144
Gladding, McBean & Co.	45
Globe Indemnity Co.	149
Golden Gate Iron Works	156
Grinnell Company of Calif.	154
Gunn, Carle Company	30
Haines, Jones & Cadbury Co.	139
Handy Self - Cleansing Flush Valve Co.	34
Hannah Bros.	146
Harvey Hubbell, Inc.	34D
Hauser Window Co.	129
Haws Sanitary Faucet Co.	152
Hermann Safe Co.	10
Herrick Iron Works	156
Hillard, C. J.	142
Hill, Hubbell & Co.	134
Hoff Magnesite Co.	155
Holbrook, Merrill & Stetson	32
Holtzer-Cabot Electric Co.	2
Home Mfg. Co.	160
Hulting, Hurst & Hulting	154
Hunt & Co., Robert W.	133
Hunter & Hudson	144
Illinois Engineering Co.	154
Indiana Limestone Ass'n	23
Ind. Automatic Spk'r Co.	10
Jackson Pump Mfg. Co.	133
Johnson, S. T.	47
Johns, Manville Co.	161
Johnson Service Co.	150
Jones Bros.	161
Joost Bros.	144
Judson Mfg. Co.	156
Kennedy, David E.	133
Kennedy Valve Co.	121
Kewanee Boiler Co.	132
King's Electrical Co.	155
Kinnear Mfg. Co.	29
Kissel, I. R.	146
Knowles, A.	148
Lannom Bros.	160
Larson-Siegrist Co., Inc.	145
Lawson & Drucker	150
Lawton & Vezey	146
Littlefield, R. W.	148
Lindgren & Swinerton, Inc.	40
MacGruer & Simpson	36
MacRorie-McLeran Co.	152
Main Iron Works	34
Magner Bros.	144
Mangrum & Otter	24
Marshall & Stearns	44
McCabe Hanger Mfg. Co.	26
McCray Refrigerator Co.	147
McLeran, R. Co.	149
McLaughlin, Jas. L.	160
McLaughlin Metal Works	138
Myers & Schwartz	151
Michel & Pfeffer Iron Works	6
Minwax Co., Inc.	153
Montague Range & Furnace Co.	130
Monson Bros.	146
Mortenson Construction Co.	156
Mott Company	159
Mueller, H., Mfg. Co.	159
Mullen Mfg. Co.	160
Musto Sons-Keenan Co.	13
Nason, R. N. & Co.	12
National Mill & Lumber Co.	32
National Terra Cotta Society	123
NePage, McKinney Co.	158
Newberry Electric Co.	158
Newman, H. G.	150
New York Belting Co.	163
Nordstrom, David	148
Oak Flooring Bureau	19
Oakley Paint Mfg. Co.	42
Ocean Shore Iron Works	162
Old Mission Portland Cement	35
Otis Elevator Company	168
Pacific Coast Steel Co.	162
Pacific Elevator Company	162
Pacific Electric Clock Co.	160
Pacific Fire Extinguisher Co.	18
Pacific Foundry Co.	133
Pacific Gas & Electric Co.	20
Pacific Mfg. Co.	145
Pacific Materials Co.	36
Pacific Plumbing Fixture Co.	2nd Cover
Pacific Rolling Mills	22
Palace Hardware Co.	36
Palm Iron Works	22
Paraffine Companies	1
Parker, C. F.	42
Parker, K. E. Co.	148
Peerless Built-In Fixture Co.	126
Pelton Water Wheel Co.	11
Peters Construction Co.	24
Peterson, Carl H.	149
Petrium Sanitary Sink Co.	140
Phillips, Chas. T. Co.	154
Picard, W. H.	150
Pittsburgh Water Heater Co.	144
Pope & Talbot	130
Plant Rubber & Asbestos Works	4
Potter Radiator Co.	34
Portland Cement Association	37
Quandt, A. & Sons	9
Ralston Iron Works	7
Randall Control Corp.	144
Ray Mfg. Co.	47
Raymond Granite Co.	25
Richards-Wilcox Mfg. Co.	138
Richmond Brick Co.	3rd Cover
Remillard Brick Co.	161
Roberts Mfg. Company	134
Robertson Co., H. H.	147
Rotary Oil Burner Company	47
Rumhf, H.	128
Ruud Heater Co.	144
Sandusky Cement Co.	125
Santa Fe Lumber Co.	130
Scott Company	145
Schrader Iron Works	156
Simmons, O. M., Co.	12
Simonds Machinery Co.	42
Sloane, W. & J.	17
Smith & Egge Mfg. Co.	136
Smith Typewriter Co.	147
Sommer, I. M.	148
Soule, Edw. L. Co.	132
Spencer Elevator Co.	149
S. & S. Tile Co.	154
Standard Electric Time Co.	4
Standard Fence Co.	149
Standard Varnish Works	9
Stanley Works	129
Steelform Contracting Co.	148
Stewart Sales Co.	16
St. John, Robert L.	16
Strable Hardwood Co.	38, 152
Sunset Lumber Co.	130
Tittle, H. S.	158
Toledo Scale Co.	11
Tokheim Oil Co.	153
Tompkins-Kiel Marble Co.	41
Tormey Co.	144
Tropico Potteries, Inc.	157
Trost, Robert	146
Truscon Steel Co.	30
United Alloy Steel Corp.	161
United Materials Co.	3rd Cover
U. S. Elaterite Products Co.	34
U. S. Metal Products Co.	27
Van Emon Elevator Co.	145
Van Fleet-Freear Co.	20
Vogt, Alfred	146
Vonnegut Hardware Co.	15
Vermont Marble Co.	142
Vukicevich & Bagge	148
Wadsworth, Howland & Co.	2
Wayne Tank and Pump Co.	34B & C
Walter, D. N. & E. Co.	142
Weber, C. F. Co.	157
Wells, A. F.	145
Wesix Electric Heater	18
West Coast Porcelain Co.	Back Cover
Western Asbestos & Magnesia Co.	22
Western Blind & Screen Co.	21
Western States Seating Co.	145
Western Iron Works	22
Westinghouse Mfg. Co.	3
White Bros.	127
Wickwire Spencer Steel Corp.	40
Williams Radiator Co.	147
Wilson, J. G., Corp.	26
Wilson, W. F. Co.	150
Witt, G. E.	48
Zelinsky, D. & Co.	149

A. Quandt & Sons

OUR WORK IS THE BEST GUARANTEE OF THE QUALITY OF OUR SERVICE

374 GUERRERO ST. **San Francisco**

Painters - Decorators

SINCE 1885

3217 So. CENTRAL AVE. **Los Angeles**

ARCHITECTS' SPECIFICATION INDEX—Continued

BUILDING MATERIALS, SUPPLIES, ETC.
- Pacific Materials Co., Underwood Bldg., San Francisco.
- Waterhouse-Wilcox Co., 523 Market St., San Francisco.
- C. H. Jensen Co., Call Building, San Francisco.
- John R. Steffens-Lomax Co., 186-5th St., San Francisco.
- The General Fireproofing Company, 20 Beale Street, San Francisco

BUILDING PAPER
- The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

BUILDING TILE (Burned Clay)
- California Brick Co., 604 Mission St., San Francisco.

CABINET MAKERS
- Home Manufacturing Company, 543 Brannan St., San Francisco.
- Mullen Manufacturing Company, 64 Rausch St., San Francisco.
- Lannom Bros. Mfg. Co., 5th and Magnolia Sts., Oakland.
- Pacific Mfg. Co., San Francisco, Los Angeles and Oakland.

CEMENT
- Atlas Portland Cement Co., agencies in all principal Coast cities.
- Best Bros. Keene's Cement Co., John R. Steffens-Lomax Co., Agents, 186-5th St., San Francisco.
- Old Mission Portland Cement Co., Mills Bldg., San Francisco.
- Medusa Stainless White Cement, plain and waterproofed, carried in stock and sold by leading building supply dealers in California, Oregon and Washington.
- The Paraffine Companies, San Francisco, and principal Coast Cities.

CEMENT EXTERIOR WATERPROOF PAINT
- Armorite, sold by W. P. Fuller & Co., all principal Coast cities.
- Minwax Co., Inc., 22 Batery St., San Francisco and 653 S. Clarence St., Los Angeles.
- The General Fireproofing Company, 20 Beale Street, San Francisco
- Bay State Brick and Cement Coating, sold by James Hambly, 229-233 Clay St., San Francisco.

CEMENT STUCCO
- "California" sold by California Stucco Products Company, Holbrook building, San Francisco.

CEMENT TESTS—CHEMICAL ENGINEERS
- Robert W. Hunt & Co., 251 Kearny St., San Francisco.

CLAY PRODUCTS
- California Brick Co. and Livermore Fire Brick Works, 604 Mission St., San Francisco.
- Cannon & Co., Sacramento, Cal.
- Gladding, McBean & Co., Crocker Bldg., San Francisco.
- Los Angeles Pressed Brick Co., Frost Bldg., Los Angeles.
- Tropico Potteries, Inc., Glendale, Cal.
- United Materials Co., Sharon Bldg., San Francisco.

CLOCKS—ELECTRIC TIME
- Standard Elertric Time Co., 461 Market St., San Francisco.
- Pacific Elertric Clock Company, 86 Third St., San Francisco.

COLD STORAGE PLANTS
- Cyclops Iron Works, 837 Folsom St., San Francisco.

COMPOSITION FLOORS
- "Linotol" plastic flooring, Hill, Hubbell & Co., 115 Davis St., San Francisco; 410 San Fernando Bldg., Los Angeles.
- Western Asbestos Magnesia Company, 25 South Park, San Francisco.
- Hoff Magnesite Co., San Francisco. Miller & Alf, 337 Monadnock Bldg., San Francisco, general agents.

CONCRETE OR CEMENT HARDENER
- Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
- The General Fireproofing Company, 20 Beale Street, San Francisco

CONCRETE MIXERS
- Foote and Jaeger mixers sold by Edward R. Bacon Co., 51 Minna St., San Francisco, also Los Angeles.

CONCRETE REINFORCEMENT
- Edw. L. Soule Co., Rialto Bldg., San Francisco.
- Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
- Clinton Welded Wire Fabric, Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.
- Judson Mfg. Co., 817-821 Folsom St., San Francisco.
- Pacific Coast Steel Company, Rialto Bldg., San Francisco.
- Triangle Mesh Fabric. Sales agents, Pacific Materials Co., 525 Market St., San Francisco.
- Truscon Steel Co., 709 Mission St., San Francisco.
- Badt-Falk Co., Call-Post Bldg., San Francisco.

CONDUITS
- "Sherarduct," Garnett Young & Company, 612 Howard St., San Francisco.

CONTRACTORS, GENERAL
- Barrett & Hilp, 918 Harrison St., San Francisco.
- Herbert Beckwith, Everson Bldg., Oakland.
- Larsen-Siegrist Co., Inc., 807 Claus Spreckels Bldg., San Francisco.
- Lindgren-Swinerton, Inc., Standard Oil Building, San Francisco
- R. W. Littlefield, 357-12th St., Oakland.
- K. E. Parker Co., Inc., Clunie Bldg., San Francisco.
- Dinwiddie Construction Co., Crocker Bldg., San Francisco.
- John M. Bactlett, 357 Twelfth St., Oakland.
- Clinton Construction Company, 923 Folsom St., San Francisco.
- Monson Bros., 251 Kearny St., San Francisco.
- Geo. Wegner, 251 Kearny St., San Francisco.
- T. B. Goodwin, 180 Jessie St., San Francisco..
- McLeran & Co., R., Hearst Bldg., San Francisco.

SATINETTE WHITE ENAMEL

FLATTINE CABINET FINISH
ELASTICA INTERIOR AND ELASTICA EXTERIOR

Standard Varnish Works

55 STEVENSON STREET SAN FRANCISCO

THE HERMANN SAFE CO.

Manufacturers of Fire and Burglar Proof Safes, Vaults and Safe Deposit Boxes

Also Representatives for the

YORK SAFE & LOCK CO. OF YORK, PA.

216-224 Fremont Street San Francisco, Cal.

ARCHITECTS' SPECIFICATION INDEX—Continued

Peters Construction Company, 705 Atlas Building, San Francisco, and Builders' Exchange, Oakland.
Robert Trost, 26th and Howard Sts., San Francisco.
I. M. Sommer, 401 Balboa Bldg., San Francisco.
Jas. L. McLaughlin, 251 Kearny St., San Francisco.
Alfred H. Vogt, 185 Stevenson St., San Francisco.
Lange and Bergstrom, Sharon Bldg., San Francisco and Washington Bldg., Los Angelea.
David Nordstrom, 4146 Emerald Street, Oakland.
Carl T. Peterson, 185 Stevenson St., San Francisco.

CONTRACTORS' EQUIPMENT
Edward R. Bacon Co., 51 Minna St., San Francisco, and Los Angeles.

CONVENIENCE OUTLETS
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St.

CORK TILE
Van Fleet-Frecar Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.
David E. Kennedy, Sharon building, San Francisco, and Story building, Los Angeles.

CRUSHED ROCK
Coast Rock & Gravel Co., Call-Post Bldg., San Francisco.

CURTAINS—STEEL, ROLLING, FIREPROOF
J. G. Wilson Corp., 621 N. Broadway, Los Angeles.

DAMP-PROOFING AND WATERPROOFING
Armorite Damp Resisting Paint, made by W. P. Fuller & Co., San Francisco.
"Imperial," manufactured by Brooks & Doerr, Merchants National Bank Building, San Francisco.
Minwax Co., Inc., 22 Battery St., San Francisco, and 653 S. Clarence St., Los Angeles.
Samuel Cabot Co., Boston; represented in San Francisco by Pacific Materials Co., Underwood Bldg., San Francisco.
"Pabco" Damp-Proofing Compound, sold by the Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.
The General Fireproofing Company, 20 Beale Street, San Francisco

DOOR HANGERS
McCabe Door Hanger Company, leading hardware stores.
Pitcher Hanger, sold by National Mill & Lumber Co., 326 Market St., San Francisco.
Stanley Works, New Britain, Conn... Monadnock Bldg., San Francisco.

DOORS—VANISHING
W. L. Evans, 700 Block B., Washington, Ind.

DRAIN PIPE AND FITTINGS
"Corrosiron" Acid Proof, manufactured by Pacific Foundry Co., Harrison and 18th Sts., San Francisco.

DRINKING FOUNTAINS
Hawa Sanitary Drinking Faucet Co., 1808 Harmon St., Berkeley, and C. F. Weber & Co., San Francisco and Los Angeles.
Crane Company, San Francisco, Oakland, and Los Angeles.
Pacific Porcelain Ware Co., 67 New Montgomery St., San Francisco.
Haines, Jones & Cadbury Co., 857 Folsom St., San Francisco.

DUMB WAITERS
Spencer Elevator Company, 166-7th St., San Francisco.
San Francisco Elevator Company, Inc., 860 Folsom St., San Francisco.
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.

ELECTRICAL CONTRACTORS
Butte Electrical Equipment Company, 530 Folsom St., San Francisco.
Butte Electric & Manufacturing Co., 534 Folsom St., San Francisco.
Central Electric Company, 177-79 Minna St., San Francisco
King's Electrical Co., Builder's Exchange, Oakland.
NePage, McKenny Co., 589 Howard St., San Francisco.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.
H. S. Tittle, 85 Columbia Square, San Francisco.
Brown-Langlais Electrical Construction Co., 313 Fifth Street, San Francisco.
A. F. Wells Company, 155 Second St., San Francisco.
Newberry Electric Company, Alta Bldg., San Francisco

ELECTRIC PLATE WARMER
The Prometheus Electric Plate Warmer for residences, clubs, hotels, etc. Sold by M. E. Hammond, Pacific Bldg., San Francisco.

ELECTRICAL SUPPLIES AND EQUIPMENT
"H. & H. Switches," Garnett Young & Co., 612 Howard St., San Francisco.
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St.
Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco.

ELECTRIC SAFETY INTERLOCKS
Richards-Wilcox Mfg. Co., 525 Market St., San Francisco.

ELEVATORS—PASSENGER and FREIGHT
Pacific Elevator & Equipment Co., 1129 Howard Street, San Francisco.
Otis Elevator Company, Stockton and North Point, San Francisco.
Spencer Elevator Company, 166-7th St., San Francisco.
San Francisco Elevator Co., 860 Folsom St., San Francisco.
Van Emon Elevator Company, 1159 Howard St., San Francisco.

ELEVATOR MOTORS AND CONTROL
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., and First National Bank Bldg., San Francisco, Calif.

Metropolitan 4597 S. F. Phone, Garfield 204

Independent Automatic Sprinkler Company

Fire Protection Engineers

O. T. Johnson Building, Los Angeles 72 Natoma Street, San Francisco

TOLEDO AUTOMATIC SPRINGLESS SCALES
12 OUNCES TO 20 TONS
for Factories, Warehouses, Wholesale Houses—in fact any kind of business where accurate weight is desired
676 MISSION ST. Phone Sutter 250 TOLEDO SCALE CO. SAN FRANCISCO California

ARCHITECTS' SPECIFICATION INDEX—Continued

ELEVATOR SIGNALS, DOOR EQUIPMENT, ETC.
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.
Randall Control & Hydrometric Corporation, 265A Minna St., San Francisco, and 523 Central Bldg., Los Angeles.
Richards-Wilcox Mfg. Co., 525 Market St., San Francisco.

ENGINEERS — CONSULTING, ELECTRICAL, MECHANICAL
Hunter & Hudson, Rialto Bldg., San Francisco.
Robert L. St. John, 1011 Flat Iron Bldg., San Francisco
Charles T. Phillips Company, Bank of Italy Bldg., San Francisco, and Roberts Bldg., Los Angeles.

FAIENCE TILE
Tropico Potteries, Inc., Glendale, Cal.

FELTS
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FENCES—WIRE AND IRON
Standard Fence Company, 432 Bryant, San Francisco and 60th and Lowell Sts., Oakland.

FIRE BRICK, TILE & CLAY
Livermore Fire Brick Works, 604 Mission St., San Francisco.

FIRE EXIT LATCHES
Vonnegut Hardware Co., Indianapolis, Ind., represented in San Francisco by Abcel Jensen Co., Call Building.

FIRE ESCAPES
Mirhel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
Western Iron Works, 141 Beale St., San Francisco.

FIRE HOSE RACKS
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

FIRE-PROOF DOORS
Forderer Cornice Works, 269 Potrero Ave., San Franrisco.
U. S. Metal Products Co., 330-10th St., San Francisco.
Kinnear Mfg. Co., represented in San Francisco by Pacific Materials Co., Underwood Bldg.
The J. G. Wilson Corporation, 621 North Broadway, Los Angeles.

FIRE SPRINKLERS—AUTOMATIC
Fire Protection Engineering Co., 67 Main St., San Francisco.
Grinnell Company of the Pacific, 453 Mission St., San Francisco.
Independent Automatic Sprinkler Co., 72 Natoma St., San Francisco.
Parific Fire Extinguisher Co., 424 Howard St., San Francisco.

FIRE RETARDING PAINT
The Paraffine Companies, Inc., 34 Firat St., San Francisco.
Fire Retardent Products Co., 2838 Hannah St., Oakland. Cal.

FIXTURES—BANK, OFFICE, STORE, ETC.
Home Manufacturing Company, 543 Brannan St., San Francisco.
The Fink & Schindler Company, 218-13th St., San Francisco.
Mullen Manufacturing Co., 64 Rausch St., San Francisco.
C. F. Weber & Co., 985 Market St., San Francisro, and 210 N. Main St., Los Angeles, Cal.

FLOORS, BLOCK
Carter, Bloxonend Flooring Co., Kansas, Mo., represented on Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

FLOOR CLIPS
Bull Dog Floor Clip Sales Co., 77 O'Farrell St., San Francisco, and 600 Metropolitan Bldg., Los Angeles.

FLOORING, HEAVY DUTY
Carter, Bloxonend Flooring Co., Kansas, Mo., represented on Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

FLOORS—TILE, CORK, ETC.
Mangrum & Otter, 827 Mission St., San Francisco.

FLOOR VARNISH
Bass-Hueter and San Francisco Pioneer Varnish Works, 816 Mission St., San Francisco.
Fifteen for Floors, made by W. P. Fuller & Co., San Francisco.
Standard Varnish Works, Chicago, New York and San Francisaro.
R. N. Nason & Co., San Francisca and Los Angeles.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FLOORS—HARDWOOD
Oak Flooring Bureau, Ashland Block, Chicago, Ill.
Cadwallader, Gibson Co., 5th & Brannan St., San Francisco.
Parrott & Co., 320 California St., San Francisco.
Strable Hardwood Company, 511 First St., Oakland.
E. L. Bruce Co., Manufacturers, Memphis, Tenn.
White Bros., 5th and Brannan Sts., San Francisco.

FLOOR TREATMENT—HARDWOOD, COMPOSITION AND CONCRETE
Minwax Co., Inc., 22 Battery St., San Francisco and 653 S. Clarence St., Los Angeles.

FLOORS—MASTIC—FLOOR COVERING
Hill, Hubbell & Company, 115 Davis St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FLUE LINING
California Brick Company, 604 Mission St., San Francisco.

FLUSH VALVES
Handy Self-Cleaning Flush Valve Co., 731 Folsom St., San Francisco.

FUEL OIL SYSTEMS
S. T. Johnson Co., 1337 Mission St., San Francisco.

THE PELTON WATER WHEEL CO.
Hydraulic Engineers
Light-Duty High-Head Pumps for Tank and Other Building Service
Heavy-Duty Pumps for Municipal and General Water Supply
2022 Harrison Street San Francisco

NASON'S OPAQUE FLAT FINISH A VALUABLE OIL PAINT FOR WALLS, CEILINGS, ETC.
Made in California to stand Pacific Coast climatic conditions
R. N. Nason & Co., Paint Makers
PORTLAND 151 Potrero Ave.—SAN FRANCISCO—436 Market St. SEATTLE

ARCHITECTS' SPECIFICATION INDEX—Continued

S. F. Bowser & Co. Inc., 612 Howard St., San Francisco.
Wayne Tank and Oil Co., 430 Fourth St., San Francisco.

FURNACES—WARM AIR
Mangrum & Otter, 827 Mission St., San Francisco.
Montague Range and Furnace Co., 826 Mission St., San Francisco.
C. B. Babcock Company, 768 Mission St., San Francisco.

FURNITURE—OFFICE, SCHOOL, CHURCH.
Home Manufacturing Company, 543 Brannan St., San Francisco.
C. F. Weber & Co., 985 Market St., San Francisco.
W. & J. Sloane, 216 Sutter St., San Francisco.
Western States Seating Co., 39 Second St., San Francisco.
H. Rumph, 567 Howard St., San Francisco.
Fink & Schindler Company, 218-19th St., San Francisco.

FURRING TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

GARAGE HARDWARE
The Stanley Works, New Britain, Conn., Coast sale officea, San Francisco, Los Angeles and Seattle, Wash.
Richards-Wilcox Mfg. Co., 525 Market St., San Francisco.

GLASS
American Window Glass Co., represented by L. H. Butcher Co., 862 Mission St., San Francisco.
Cobbledick-Kibbe Glass Co., 666 Howard St., San Francisco.
Fuller & Goepp, 32 Page St., San Francisco, and Jackson, at Eleventh St., Oakland.
W. P. Fuller & Company, all principal Coast cities.

GRADING, WRECKING, ETC.
Dolan Wrecking & Construction Co., 1607 Market St., San Francisco.

GRANITE
Raymond Granite Co., Potrero Ave., and Division St., San Francisco.

GRAVEL AND SAND
Coast Rock & Gravel Co., Call-Post Bldg., San Francisco.
Del Monte White Sand, sold by Del Monte Properties Co., Crocker Bldg., San Francisco.

GYMNASIUM EQUIPMENT—LOCKERS, ETC.
Ellery Arms Co., 583 Market St., San Francisco.
George Trask, Durand Steel Locker Co., 76 Sacramento St., San Francisco.

HARDWARE
Joost Bros., agents for Russell & Erwin Hardware, 1053 Market St., San Francisco.
The Stanley Works, New Britain, Conn.; Coast sales offices, San Francisco, Los Angeles, and Seattle, Wash.
Corbin hardware, sold by Palace Hardware Co., 581 Market St., San Francisco.
Vonnegut hardware, sold by Abeel-Jensen Co. Call Bldg., San Francisco.
Richards-Wilcox Mfg. Co., Aurora, Ill.; Ewing-Lewis Co., 626 Underwood Building, San Francisco.

HARDWOODS
White Brothers, 5th and Brannan Streets, San Francisco.

HEATING AND VENTILATING CONTRACTORS
Atlas Heating and Ventilating Company, Inc., Fourth and Freelon Sts., San Francisco.
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St,, San Francisco.
Hateley & Hateley, Mitau Bldg., Sacramento.
Mangrum & Otter, 827-831 Mission St., San Francisco.
Lawson & Drucker, 450 Hayes St., San Francisco.
Carl T. Doell, 467 21st St., Oakland.
Luppen, Hawley & Thing, 906 7th St., Sacramento.
William F. Wilson Co., 328 Mason St., San Francisco.
W. H. Picard, 5656 College Ave., Oakland.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.
Scott Company, 243 Minna St., San Francisco.
H. G. Newman Co., 2004 Telegraph Ave., Oakland.

HEATING & VENTILATING EQUIPMENT
W. S. Haines & Co.'s steam specialties. O. M. Simmons Company, 115 Mission St., San Francisco.
Hulting, Hurst & Hulting, representing Jas. P. Marsh Co., Monadnock Bldg., San Francisco.
Illinois Engineering Co., Pacific Bldg., San Francisco.
Williams Radiator Company, 571 Mission St., San Francisco.

HEATERS, WATER-GAS, ELECTRIC, ETC.
Pittsburg Water Heater Company, 478 Sutter St., San Francisco.
Ruud Automatic Water Heater, sold by Ruud Heater Company, 431 Sutter St., San Francisco.
C. B. Babcock Company, representing General Gas Light Company, 768 Mission St., San Francisco.
Wesix Heaters sold by Wesley W. Hicks, Rialto Building, San Francisco.

HEATERS, GAS GRATES, RADIATORS, ETC.
General Gas Light Company, 768 Mission St., San Francisco.
Ra-Do Fumeless Gas Radiators, Potter Radiator Corporation, 478 Sutter St., San Francisco
Humphrey Radiantfire, sold by Rudd Heater Company, 431 Sutter St., San Francisco.
Williams Radiator Company, "Gas Steam Radiators," 571 Mission St., San Francisco.
McLaughlin Metal Works, 223 J St., Sacramento.

HOLLOW BUILDING TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

W. S. Haines & Co., Steam Specialties, Vacuum and Vapor Systems of Heating
"Twenty-four years of satisfactory service."
(See Page 1503 of Sweet's Catalogue)
O. M. SIMMONS CO. 115 Miasion St., San Francisco
Phone: Douglas 5497

Clarence E. Musto, Pres. Joseph B. Keenan, Vice-Pres. Guido J. Musto, Sec'y & Treas.

JOSEPH MUSTO SONS--KEENAN CO.

Phone Franklin —6365— MARBLE Office and Mills: 535-565 North Point St., SAN FRANCISCO. CAL.

ARCHITECTS' SPECIFICATION INDEX—Continued

HOLLOW TILE BLOCKS
- Cannon & Co., plant at Sacramento; 77 O'Farrell St., San Francisco.
- California Brick Company, 604 Mission St., San Francisco.
- Gladding, McBean & Co., San Francisco, Los Angeles, Oakland and Sacramento.

HOSE—UNDERWRITERS UNLINED LINEN—RUBBER
- Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

HOSPITAL FIXTURES
- Mott Company of California, 553 Mission St., San Francisco.

HOSPITAL SIGNAL SYSTEMS
- Chicago Signal Co., represented by Garnett Young & Co., 612 Howard St., San Francisco.
- Holtzer-Cabot Electric Company, San Francisco Branch, Aronson Building.

ICE MAKING MACHINERY
- Cyclops Iron Works, 837 Folsom St., San Francisco.

INCINERATORS
- The Incinerite, sold by M. E. Hammond, Mezzanine, Pacific Building, San Francisco.

INDUSTRIAL LIGHTING EQUIPMENT
- Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

INGOT IRON
- "Armco" brand, manufactured by American Rolling Mill Company, Middletown, Ohio, and 10th and Bryant Sts., San Francisco.

INSPECTIONS AND TESTS
- Robert W. Hunt & Co., 251 Kearny St., San Francisco.

INSULATION
- Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

JAIL EQUIPMENT
- Ralston Iron Works, 20th and Indiana Sts., San Francisco.

LAMP POSTS, ELECTROLIERS, ETC.
- J. L. Mott Iron Works, 553 Mission St., San Francisco.

LANDSCAPE ARCHITECT
- Emerson Knight, 704 Market St., San Francisco.

LANDSCAPE GARDENERS
- MacRorie-McLaren Co., 514-516 Phelan Bldg., San Francisco.

LATHING AND PLASTERING
- MacGruer & Simpson, 226 Tehama St., San Francisco.
- A. Knowles, Call-Post Bldg., San Francisco.

LATHING MATERIAL—WIRE, METAL, ETC.
- Buttonlath Manufacturing Co., Los Angeles and 207 Balboa Bldg., San Francisco.
- Pacific Materials Co., 525 Market St., San Francisco.
- The General Fireproofing Company, 20 Beale Street, San Francisco
- Truscon Steel Co., 709 Mission Street, San Francisco.
- Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.
- United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

LIGHT, HEAT AND POWER
- Great Western Power Company, Stockton St., near Sutter, San Francisco.
- Pacific Gas & Electric Co., Sutter St., San Francisco.

LIGHTING FIXTURES
- Benjamin Electric Mfg. Co., New York, Chicago, 580 Howard St., San Francisco.
- D. Dierssen Co., 20 Second Street, San Francisco. Distributors Solar-Lite fixtures.
- Roberts Mfg. Co., 663 Mission St., San Francisco.

LIMESTONE, INDIANA
- Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana.

LINOLEUM
- D. N. & E. Walter & Co., 562 Mission St., San Francisco.
- The Paraffine Companies, factory in Oakland; office, 34 First St., near Market, San Francisco.
- W. & J. Sloane, 216 Sutter St., San Francisco.
- Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

LINOTILE
- Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

LUMBER
- Hart-Wood Lumber Co., Fifth and Berry Sts., San Francisco.
- Pacific Manufarturing Company, San Francisco, Oakland, Los Angeles and Santa Clara.
- Pope & Talbot, foot of Third St., San Francisco.
- Santa Fe Lumber Co., 16 California St., San Francisco.
- Sunset Lumber Company, First and Oak Sts., Oakland.
- White Bros., 5th and Brannan Sts., San Francisco.

MAIL CHUTES
- American Mailing Device Corp., represented on Pacific Coast by Waterhouse-Wilcox Co., 523 Market St., San Francisco.

MANTELS—WOOD, TILE, ETC.
- Mangrum & Otter, 827-831 Mission St., San Francisco.

MARBLE
- American Marble and Mosaic Co., 25 Columbus Square, San Francisco.
- Ray Cook Marble Company, foot of Powell St., Oakland.
- Joseph Musto Sons, Keenan Co., 535 N. Point St., San Francisco.
- Vermont Marble Co., Coast branches, San Francisco, Portland and Tacoma.
- Tompkins-Kiel Marble Company, 505 Fifth Ave., New York; also Chicago, Philadelphia and San Francisco.
- Columbia Marble Co., 413 Rialto Bldg., San Francisco.

RAY COOK MARBLE CO.

IMPORTED AND DOMESTIC MARBLES

For Building Construction

Factory and Office, foot of Powell St., Oakland Phone Piedmont 1009

ELECTRIC APPLIANCE COMPANY
ELECTRICAL SUPPLIES
AUTOMOTIVE SUNDRIES RADIO EQUIPMENT
809 MISSION STREET, SAN FRANCISCO
Phone Sutter 4900

ARCHITECTS' SPECIFICATION INDEX—Continued

METAL DOORS AND WINDOWS
Waterhouse-Wilcox Co., Inc., 523 Market St., San Francisco.
U. S. Metal Products Co., 330 Tenth St., San Francisco.

METAL FURNITURE
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

METAL STORE FRONTS
Cobbledick-Kibbe Glass Company, 666-8 Howard street, San Francisco, and Washington at Third St., Oakland.

METAL TOILET—PARTITIONS
John R. Steffens-Lomax Co., 951 Monadnock Bldg., San Francisco.

MILL WORK
Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.
National Mill and Lumber Co., San Francisco and Oakland.
Lannom Bros. Mfg. Co., 5th and Magnolia Sts., Oakland.
The Fink & Schindler Company, 218-13th St., San Francisco.

OIL BURNERS
Bunting Iron Works, 1215 First Nat. Bank Bldg., San Francisco.
Coen Co., Inc., 112 Market St., San Francisco
Fess System Co., 220 Natoma St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
G. E. Witt Co., 862 Howard St., San Francisco.
W. S. Ray Mfg. Company, Rialto Bldg., San Francisco, and 2206 San Pablo Ave., Oakland.
Rotary Oil Burner Company, 159 Twelfth St., Oakland.

OIL STORAGE AND DISTRIBUTING STATIONS
S. F. Bowaer & Co., Inc., 612 Howard St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
Wayne Oil Tank & Pump Co., 430 Fourth St., San Francisco; 830 S. Los Angeles St., Los Angeles.

ORNAMENTAL IRON AND BRONZE
California Artistic Metal and Wire Co., 349 Seventh St., San Francisco.
Federal Ornamental Iron and Bronze Co., 16th St., and San Bruno Ave., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
C. J. Hillard Company, Inc., 19th and Minnesota Sts., San Francisco.
Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.

PANIC DOORS
Vonnegut hardware, sold by Abeel-Jensen Co. Call Bldg., San Francisco.

PAINT FOR CEMENT AND STUCCO
Wadsworth, Howland & Co., Inc., Jas. Hambly & Son, 1333 E. 7th St., Los Angeles, and 229 Clay St., San Francisco.

PAINT FOR STEEL STRUCTURES, BRIDGES, ETC.
The Paraffine Companies, Inc., 34 First St., San Francisco.
Premier Graphite Paint and Pioneer Brand Red Lead, made by W. P. Fuller & Co., San Francisco.
Hill, Hubbell & Company, 115 Davis St., San Francisco.
U. S. Elaterite Products Co. of the Pacific, American National Bank Building, San Francisco.

PAINTING, TINTING, ETC.
I. R. Kissel, 1747 Sacramento St., San Francisco.
D. Zelinsky & Sons, San Francisco and Los Angeles.
The Tormey Co., 681 Geary St., San Francisco.
A. Quandt & Son, 374 Guerrero St., San Francisco.
Artistic Painting Company, 39 Tehama St., San Francisco.

PAINTS, OILS, ETC.
Magner Bros., 414-424 Ninth St., San Francisco.
Bass-Hueter Paint Co., Mission, near Fourth St., San Francisco and all principal Coast cities.
R. N. Nason & Company, San Francisco, Los Angeles, Portland and Seattle.
W. P. Fuller & Co., all principal Coast cities.
Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Fire Retardent Products Co., 2838 Hannah St., Oakland, Cal.
Oakley Paint Manufacturing Company, 727 Antonia St., Los Angeles, and Hearst Building, San Francisco.

PARTITIONS—FOLDING AND ROLLING
J. G. Wilson Corporation, 621 N. Broadway, Los Angeles; Waterhouse-Wilcox Co., Underwood Bldg., San Farnciaco.

PARTITION TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

PILE DRIVING AND DREDGING
Western Construction Company, 24 California St., San Francisco.

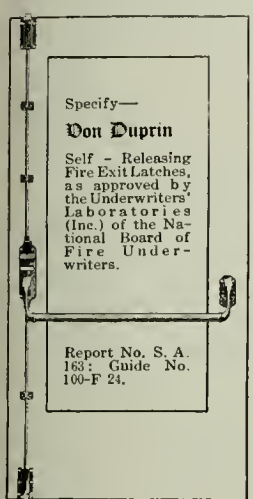
PLASTERING CONTRACTORS
A. Knowles, Call Bldg., San Francisco.
MacGruer & Simpson, 266 Tehama St., San Francisco.

PLUMBING CONTRACTORS
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St., San Francisco.

SILENT CALL **Chicago HOSPITAL** SIGNAL SYSTEMS
GARNETT YOUNG AND COMPANY
Pacific Coast Sales Engineers
612 Howard St., San Francisco
Seattle Los Angeles Portland

Von Duprin

Self-Releasing Fire Exit Latches


Specify—
Von Duprin
Self - Releasing Fire Exit Latches, as approved by the Underwriters' Laboratories (Inc.) of the National Board of Fire Underwriters.
Report No. S. A. 163: Guide No. 100-F 24.

Public Confidence

The general public has greater confidence in the building which is equipped with **Von Duprin** Self-Releasing Fire Exit Latches.

An ever increasing number of people are learning what **Von Duprin** latches are for, and as this number continues to grow, the good-will value of **Von Duprins** grows with it.

Public confidence, secured for the cost of a few sets of **Von Duprin** latches, is too precious an asset for any building owner to overlook.

Ask us for Catalog 12-L, or see "Sweet's," pages 1323-1327.

VONNEGUT HARDWARE CO.
Indianapolis, Ind.

Samuel Cupples School,
St. Louis, Mo.
R. M. Milligan Architect

BLACKBOARDS
First Grade Natural Slate Green or Black Composition Board
Estimates Given for Complete Installations School Furniture and Supplies
STEWART SALES CO.
247 Rialto Building San Francisco. Cal.

ARCHITECTS' SPECIFICATION INDEX—Continued

Doell, Carl T., 467 21st St., Oakland.
Hateley & Hateley, Mitau Bldg., Sacramento.
Scott Co., Inc., 243 Minna St., San Francisco.
Wm. F. Wilson Co., 328 Mason St., San Francisco.
Luppen, Hawley & Thing, 906 7th St., Sacramento.
W. H. Picard, 5656 College Ave., Oakland.
H. G. Newman Company, 2004 Telegraph Ave., Oakland.

PLUMBING SUPPLY HOUSES
Crane Company, all principal coast cities.
Haines, Jones & Cadbury Co., 857 Folsom St., San Francisco.
Holbrook, Merrill & Stetson, 64 Sutter St., San Francisco.
H. Mueller Manufacturing Company, 1072-76 Howard St., San Francisco.
J. L. Mott Iron Works, D. H. Gulick, selling agent, 553 Mission St., San Francisco.
Pacific Sanitary Manufacturing Co., 67 New Montgomery St., San Francisco.
West Coast Porcelain Manufacturers, 334-335 Wells Fargo Building, 85 Second St., San Francisco.

POLES AND PILING
Santa Fe Lumber Co., 16 California St., San Francisco.

PUMPS—HAND OR POWER
Chicago Pump Co., represented by Garnett, Young & Co., 612 Howard St., San Francisco.
Simonds Machinery Co., 117 New Montgomery St., San Francisco.
Ocean Shore Iron Works, 558 Eighth St., San Francisco.
Pelton Water Wheel Co., 2022 Harrison St., San Francisco.
S. F. Bowser & Co., Inc., 612 Howard St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
Wayne Tank & Pump Co., 430 Fourth St., San Francisco; 830 S. Los Angeles St., Los Angeles.
Byron Jackson Iron Works, 55 New Montgomery St., San Francisco.

RADIO EQUIPMENT
Electric Appliance Company, 809 Mission St., San Francisco.

REINFORCING STEEL
Edward L. Soule, Rialto Bldg., San Francisco.
Badt-Falk & Co., Call Bldg., San Francisco.
Judson Iron Works, San Francisco and Oakland.
Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
Pacific Coast Steel Co., Rialto Bldg., San Francisco.
Truscon Steel Co., 709 Mission St., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

REFLECTORS
I. P. Frink, Inc., 77 O'Farrell St., San Francisco.
Benjamin Electric Mfg. Co., 580 Howard St., San Francisco.

REFRIGERATORS
McCray Refrigerator Company San Francisco office, 765 Mission St.

ROOFING AND ROOFING MATERIALS
"Malthoid" and "Ruberoid," also "Pabco" ten and twenty year roofs, manufactured by the Paraffine Companies, Inc., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.
H. H. Robertson Co., Hobart Bldg., San Francisco.
Jones Brothers Asbestos Supply Co., 512 Second St., San Francisco.
Johns-Manville Inc., of California, 500 Post St., San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.

RUBBER TILING—INTERLOCKING
New York Belting & Packing Co., 518-19 Mission St., San Francisco.

RUGS & CARPETS
W. & J. Sloane, 216 Sutter St., San Francisco.

SAFETY TREADS
Pacific Materials Co., 525 Market St., San Francisco.

SAND
Coast Rock & Gravel Co., Call Bldg., San Francisco.
Del Monte White Sand, Del Monte Properties Co., 401 Crocker Bldg., San Francisco.

SASH AND CABLE CHAINS
Smith & Egge Mfg. Co., Bridgeport, Conn. Coast agents, Rawlins & Smith, San Francisco and Los Angeles.

SAFES AND VAULTS
Hermann Safe Company, 216 Fremont St., San Francisco.

SCALES
Toledo Scale Company, 676 Mission St., San Francisco.

SCENIC PAINTING—DROP CURTAINS, ETC.
The Edwin H. Flagg Scenic Co., 1638 Long Beach Ave., Los Angeles, and 17th and Mission Sts., San Francisco.

SCHOOL AND THEATER EQUIPMENT
H. Rumpf, 567 Howard St., San Francisco.

SHEATHING AND SOUND DEADENING
Samuel Cabot Mfg. Co., Boston, Mass., agencies in San Francisco, Oakland, Los Angeles, Portland, Tacoma and Spokane.
The Paraffine Companies, Inc., 34 First St., San Francisco.

SHEET METAL WORK
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
U. S. Metal Products Co., 330-10th St., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

SHINGLE STAINS
Bass-Huetter Paint Company, all principal Coast cities.

ELECTRICAL LAYOUTS AND PLANS
FOR BUILDINGS, INDUSTRIAL PLANTS, ETC.
ROBERT L. ST. JOHN
Phone Douglas 5902 1011 FLAT IRON BUILDING San Francisco, Calif.

BULL DOG FLOOR CLIPS

The use of this clip to anchor wood floors to concrete is cheap insurance against floor buckle and dry rot. Write for samples and special information.

BULL DOG FLOOR CLIP SALES CO.

77 O'Farrell St., San Francisco 600 Metropolitan Bldg., Los Angeles

L. T. KELLEY, General Manager

ARCHITECTS' SPECIFICATION INDEX—Continued

Cabot's Creosote Stains, sold by Pacific Bldg. Materials Co., 525 Market St., San Francisco.
Fuller's Pioneer Shingle Stains, made by W. P. Fuller & Co., San Francisco.
The Paraffine Companies, San Francisco, and principal Coast Cities.

SHUTTERS—ROLLING, FIRE, STEEL, WOOD
J. G. Wilson Corp, 621 North Broadway, Los Angeles.

SIGNALING & PROTECTIVE SYSTEMS
Holtzer-Cabot Electric Co., 125 Armory St., Boston; 408 Claus Spreckels Building, San Francisco.
Garnett, Young & Co., 612 Howard St., San Francisco.

SINKS—COMPOSITION
Petrium Sanitary Sink Co., Fifth and Page Sts., Berkeley.

SKYLIGHTS
H. H. Robertson Co., represented on the Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

STEEL HEATING BOILERS
Birchfield Boiler Company, Tacoma, Washington.
Kewanee Boiler, factory branch, Exposition Building, San Francisco.

STEEL TANKS, PIPE, ETC.
Ocean Shore Iron Works, 55 Eighth St., San Francisco.

STEEL TANKS
Main Iron Works, 1000 Sixteenth St., San Francisco
S. T. Johnson Co., 1337 Mission St., San Francisco.

STEEL & IRON
Main Iron Works, 1000 Sixteenth Street, San Francisco.

STEEL AND IRON—STRUCTURAL
Central Iron Works, 621 Florida St., San Francisco.
Herrick Iron Works, 18th and Campbell Sts., Oakland.
Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
Judson Mfg. Co., 817-821 Folsom St., San Francisco.
Mortenson Construction Co., 19th and Indiana Sts., San Francisco.
Pacific Rolling Mills, 17th and Mississippi Sts., San Francisco.
Palm Iron & Bridge Works, Sacramento.
Ralston Iron Works, 20th and Indiana streets, San Francisco.
Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.
Western Iron Works, 141 Beale St., San Francisco.

STEEL LUMBER
The General Fireproofing Company, 20 Beale Street, San Francisco

STEEL ROLLING DOORS
Kinnear Rolling Steel Doors, sold by Pacific Building Materials Co., Underwood Bldg., San Francisco.
Wilson Rolling Steel Doors, the J. G. Wilson Corporation, 621 North Broadway, Los Angeles and Waterhouse Wilcox Co., 523 Market St., San Francisco.

STEEL SASH
Bayley-Springfield solid steel sash, sold by Pacific Materials Co., 525 Market St., San Francisco.
"Fenestra" Solid Steel Sash, manufactured by Detroit Steel Products Co., factory sales office, 251 Kearny St., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
U. S. Metal Products Company, 330 Tenth St., San Francisco.
Truscon Steel Company, 709 Mission St., San Francisco.
Allison Steel Sash—John R. Steffens-Lomax Company, 186-5th St., San Francisco.

STEEL TANKS
Main Iron Works, 1000 Sixteenth Street, San Francisco.

STEP AND WALK BRICK
California Brick Company, 604 Mission St., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.

STONE
Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana.

STREET LIGHTING EQUIPMENT
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

STUCCO AND STUCCO BASE
John R. Steffens-Lomax Co., 186-5th St., San Francisco.

STUCCO, COMPOSITION
California Stucco Co., Hunbronk Building, San Francisco.
Hoff Magnesite Co., San Francisco. Miller & Alf, 337 Monadnock Bldg., San Francisco, general agents.

STUDDING—FIREPROOF STEEL
The General Fireproofing Company, 20 Beale Street, San Francisco

SWITCHES AND SWITCHBOARDS
Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

TELEPHONES—AUTOMATIC
P-A-X System, represented by Direct Line Telephone Company, 37 California Street, San Francisco.

TELEPHONE SYSTEMS
Direct Line Telephone Co., 37 California Street, San Francisco.
"Connecticut" Intercommunicating Telephones, Myers & Schwartz, 71 New Montgomery St., San Francisco.
"Stromberg-Carlson Telephones," Garnett Young & Company, 612 Howard St., San Francisco.

THEATER AND OPERA CHAIRS
C. F. Weber & Co., 365 Market street, San Francisco.
Western States Seating Co., 133 Kearny St., San Francisco.

W. & J. SLOANE

216-228 SUTTER STREET
SAN FRANCISCO
Phone: GARFIELD 2838

LINOLEUMS
WINDOW SHADES
CARPETS
FURNITURE

WESIX ELECTRIC HEATING SYSTEMS
FOR HOTELS, APARTMENTS, PUBLIC BUILDINGS, RESIDENCES
W. WESLEY HICKS, Manufacturer
Rialto Building Tel. Doug. 1187 San Francisco

ARCHITECTS' SPECIFICATION INDEX—Continued

THERMOSTATS FOR HEAT REGULATION
Johnson Service, Rialto Bldg., San Francisco.

TILES FOR FLOORS, MANTELS, ROOFS
Cannon & Co., Sacramento; and 77 O'Farrell St. San Francisco.
Gladding, McBean & Co., Crocker Bldg., San Francisco.
Livermore Fire Brick Works and California Brick Company, 604 Mission St., San Francisco.
S. & S. Tile Co., 4th and Carrie Streets, San Jose.

TRAVELING CRANES
Cyclops Iron Works, 837 Folsom St., San Francisco.

VALVES—PIPES AND FITTINGS
Crane Radiator Valves, manufactured by Crane Co., Second and Brannan Sts., San Francisco.
Grinnell Co., 453 Mission St., San Francisco.
O. M. Simmons Co., 115 Mission St., San Francisco.
H. Mueller Mfg. Co., 635 Mission street, San Francisco.
Kennedy Valve Mfg. Co., 23-25 Minna street, San Francisco.

VALVE PACKING
N. H. Cook Belting Co., 317 Howard St., San Francisco.

VARNISHES
Bass-Hueter Paint Company, Mission, near 4th street, San Francisco, and all principal Coast cities.
W. P. Fuller Co., all principal Coast cities.
R. N. Nason & Co., San Francisco, Los Angeles, Portland and Seattle.
Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

VENEERS AND VENEERED PANELS
White Brothers, 5th and Brannan Streets, San Francisco.

VENTILATORS
H. H. Robertson Co., represented on the Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

VITREOUS CHINAWARE
Pacific Sanitary Manufacturing Company, 67 New Montgomery St., San Francisco.
West Coast Porcelain Manufacturers, Wells Fargo Building, San Francisco.

WATERPROOFING (See Damproofing)
Medusa Waterproofing, manufactured by Sandusky Cement Co., Cleveland, Ohio. Carried in stock and sold by leading building supply dealers in California, Oregon and Washingt
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

WALL BEDS—SEATS, ETC. (See Beds)

WALL BOARD
"Amiwud" and "Pabco," manufactured by The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
"Campo-Board," White Brothers, distributors, 5th and Brannan Streets, San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.

WALL PAINT
Nason's Opaque Flat Finish, manufactured by R. N. Nason & Co., San Francisco, Portland and Los Angeles.

WALL PAPER AND DRAPERIES
The Tormey Co., 681 Geary St., San Francisco.
W. & J. Sloane, 216-228 Sutter St., San Francisco.
Uhl Bros., San Francisco.

WARDROBES, SCHOOL
W. L. Evans, 700 Block B., Washington, Indiana
James G. Wilson Corporation, 11 East 36th St., New York and Los Angeles.

WASHING MACHINES—ELECTRIC
Thor Electric Shop, 124 Post St., San Francisco.

WATER SUPPLY SYSTEMS
Kewanee Water Supply System—Simonds Machinery Co., agents, 117 New Montgomery St., San Francisco.

WATERPROOFING
U. S. Elaterite Products Co. of the Pacific, American National Bank Building, San Francisco.

WHEELBARROWS—STEEL
Western Iron Works, Beale and Main Sts., San Francisco.

WHITE ENAMEL
"Gold Seal," manufactured and sold by Bass-Hueter Paint Co. All principal Coast cities.
"Silkenwhite," made by W. P. Fuller & Co., San Francisco.
"Satinette," Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., 34 First St., San Francisco, Los Angeles, Portland and Seattle.
Murphy's Muronic Enamel and Murphy's Enamel Undercoating, Uhl Bros., San Francisco, Seattle, Portland, Oakland, Los Angeles.

WINDOW SHADES
W. & J. Sloane, 216 Sutter street, San Francisco.
D. N. & E. Walter, 562 Mission street, San Francisco.

WINDOW SASH CHAIN
The Smith & Egge Mfg. Co., Bridgeport, Conn. Coast agents, Rawlins & Smith, 604 Mission St., San Francisco, and 618 American Bank Building, 2nd and Spring Sts., Los Angeles.

WINDOWS, REVERSIBLE, CASEMENT, ETC.
Hauser Window Co., 1362 Harrison St., San Francisco.
J. G. Wilson Corporation, 621 N. Broadway, Los Angeles; Waterhouse-Wilcox Co., Underwood Bldg., San Francisco.
Critall Casement Window Company, Detroit; Waterhouse-Wilcox Company, agents, 523 Market St., San Francisco.

WIRE, ELECTRICAL
Garnett Young & Company, 612 Howard St. San Francisco.
Electric Appliance Company, 809 Mission St., San Francisco.
"Lowell" Rubber Covered Wire sold by Myers & Schwartz, 90 New Montgomery St., San Francisco.

WIRE FENCE
Standard Fence Co., 245 Market street, San Francisco; and 310 12th street, Oakland.

GLOBE AUTOMATIC SPRINKLERS
Will protect your building and business from destruction by fire and reduce your Insurance Rate. Write for estimates.
Pacific Fire Extinguisher Company
FIRE PROTECTION ENGINEERS
424-440 Howard Street, San Francisco Manufacturing Plant, 298 Fremont St.

America Is Still Short Over One Million Homes
—*Literary Digest*

Old home in La Grange, Ill., built over 30 years ago, remodeled into a 2 family flat, and modernized by 3/8 in. oak flooring

In re-modeling commissions
—*the most effective single factor is a new* OAK FLOOR

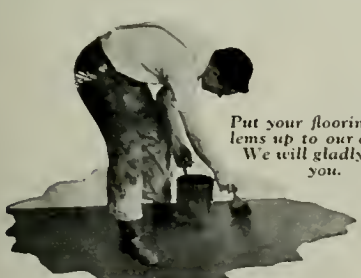
The thing that makes an old home look "down-in-the-heel" more than anything else is the old softwood floor. It shows the wear and tear of the past generation, and doesn't look modern. Nothing will modernize such a home more convincingly than 3/8 inch oak flooring, utilizing the old floor as a sub-floor, with the new oak flooring laid at an angle to it.

It becomes the basis of decoration, because the floor is most conspicuous, and with oak, in Nature's own beauty of grain, as a foundation, any decorative scheme is enhanced; without it, seriously handicapped. Harmonious treatment of the room as a whole is made possible, particularly with the new modern finishes which may be selected to suit individual taste.

The cost is low, while the lasting qualities of oak are infinite. When oak is laid, the flooring problem is settled for all time.

Our new booklet, containing plates in color of the new finishes, will be mailed to architects on request. Technical information on proper laying and finishing will also be gladly furnished.

OAK FLOORING BUREAU
1036 Ashland Block, Chicago



Put your flooring problems up to our experts. We will gladly serve you.

OAK FLOORS

SEE OUR CATALOGUE IN SWEETS

See page 81

NATURE'S GIFT OF EVERLASTING BEAUTY

ARCHITECTS *and* BUILDERS —

In drawing up plans and specifications for modern homes of today, are realizing that to be modern electrically a home must have a wiring installation so complete and of such a capacity as to take care of all uses of electricity. These uses will include an electric range, water heater, air heaters, washing machine, ironer, dryer and other household appliances.

PACIFIC GAS AND ELECTRIC COMPANY

P·G·and E·

"PACIFIC SERVICE"

195-923

ARMSTRONG'S

LINOTILE
CORK TILE
LINOLEUM

Furnished and Installed by

VAN FLEET FREEAR COMPANY

420 South Spring St.
Los Angeles

557 Howard Street
San Francisco

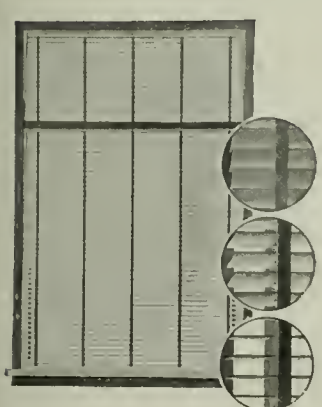
Offices of the National City Company, Pacific Mutual Bldg., Los Angeles, Cal.

Seven Points of Worth

CONSIDER these valuable points of service and economy. Western Venetian Blinds:—

—Utilize 100% of available window area for lighting purposes.
—Permit the regulation of daylight and ventilation.
—Eliminate the intense glare of the sun, and change bright sunlight into soft, restful daylight.
—Reduce the heat from the sun.
—Serve in place of both awnings and shades, and perform a better service.
—Give from 20 to 30 years of satisfactory service at a minimum of maintenance.
—Harmonize with, and enhance the architectural beauty of business structures.

No other window equipment has these seven points of worth; nor will any other render such efficient service, for so long a time, at an equally low cost.



Western Venetian Blinds can be instantly and easily adjusted to regulate light and ventilation.

Write for Special Bank and Office Building Catalogs
See Sweets Catalog, pages 1081 to 1085 inclusive, 17th Edition

Western Blind & Screen Company

General Offices, Los Angeles; Factories, Los Angeles and Kansas City

New York, N. Y., 25 W. 43rd St. Chicago, Ill., 326 W. Madison St.
Atlanta, Ga., 309 Flatiron Bldg. Portland, Ore., 213 Fitzpatrick Bldg.
Kansas City, Mo., 14th & Montgall San Francisco, Cal., 921 Hearst Bldg.
Texas Agents: Two Republics Sales Service
523 Hicks Bldg., San Antonio Kirby Bldg., Dallas

Western Venetian Blinds

MORE LIGHT~MORE AIR~LESS GLARE

E. B. Noble, President
A. E. Wilkins, Vice-Pres.

Beam, Angle, Channels, and Universal Mill Plates for immediate shipment from stock

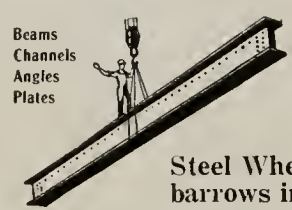
Pacific Rolling Mill Co.

SUPPLIERS OF

FABRICATED STRUCTURAL STEEL, Forgings
Bolts, Rivets, Frogs, Switches, Cast Iron Castings

General Office and Works
17th and MISSISSIPPI STS., SAN FRANCISCO
Telephone Market 215

W. B. MORRIS, Pres. H. H. MORRIS, V.-P. L. J. GATES, Sec.

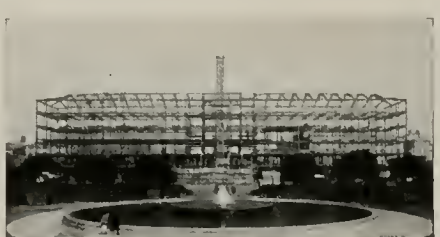


Steel Wheelbarrows in Stock

Western Iron Works

STRUCTURAL IRON AND STEEL CONTRACTORS

141-147 Beale St. and 132-148 Main St. SAN FRANCISCO
Phones: GARFIELD 2575—2576



Bliss & Faville, Architects

Steel Frame, California State Building, Civic Center, San Francisco.

FABRICATED BY

THE PALM IRON AND BRIDGE WORKS (Incorporated)

15th and R Streets, Sacramento

WESTERN ASBESTOS MAGNESIA CO.

INSULATING ENGINEERS AND CONTRACTORS

CELOTEX
INSULATING LUMBER

PLASTER BASE
INSULATOR
SOUND DEADENER
ACOUSTIC CORRECTOR

Asbestos and Asphalt Slate Shingles and Roofings
Asbestos and Composition Roofings—Roof Coatings
Magnesia and Asbestos Pipe and Boiler Coverings
Cold Storage Insulation—Sectional Expansion Paving Joint
"Linofelt" Sound Deadener—Wall Board
Cork Pipe Covering, Board and Granulated Cork

21-29 South Park
Bet. 2nd and 3rd Sts.
San Francisco, Cal.
Telephone Douglas 3860

Federal Reserve Bank Building, St. Louis, Mo.

MAURAN, RUSSELL & CROWELL, *Architects*

Federal Reserve System Manifests Preference for Indiana Limestone Construction

No such ovation has ever been paid any building material as has been accorded Indiana Limestone in its selection for the construction of eight Federal Reserve Bank buildings.

Most recent of this interesting group is the building to be erected at St. Louis. It will be occupied exclusively by the various departments of the bank and will be completed in January, 1925.

The exterior walls are self-supporting and provide an opportunity for deep reveals. The scale of the building is massive and the stone will be used in large units for the purpose of creating an harmonious whole.

In this building the Architects, Messrs. Mauran, Russell & Crowell, have created a design which admirably expresses the dignity and permanency of the institution it is to house.

Our new booklet on bank building is acknowledged to be an unusually fine compilation of material on this subject and will be sent free upon request.

INDIANA LIMESTONE
The NATION'S BUILDING STONE

Indiana Limestone Quarrymen's Association, Box 770, Bedford, Ind.
Service Bureaus in New York and Chicago

Steam Heating and Ventilating

For Commercial and Public Buildings

Furnace Heating for the Home

Mangrum & Otter, Inc.

827-831 Mission Street San Francisco, Cal.

Phone Kearny 3155

FOR PERFECT ILLUMINATION

Specify **Solar Lighting Fixtures**

The most efficient commercial lighting unit on the market for diffusion and quality of light. A wide range of types from plain commercial to ornamental strap iron designs are carried in stock.

Write for Booklet Showing Complete Line

D. DIERSSEN COMPANY

20 Second Street San Francisco

PETERS CONSTRUCTION CO.

GENERAL CONTRACTORS

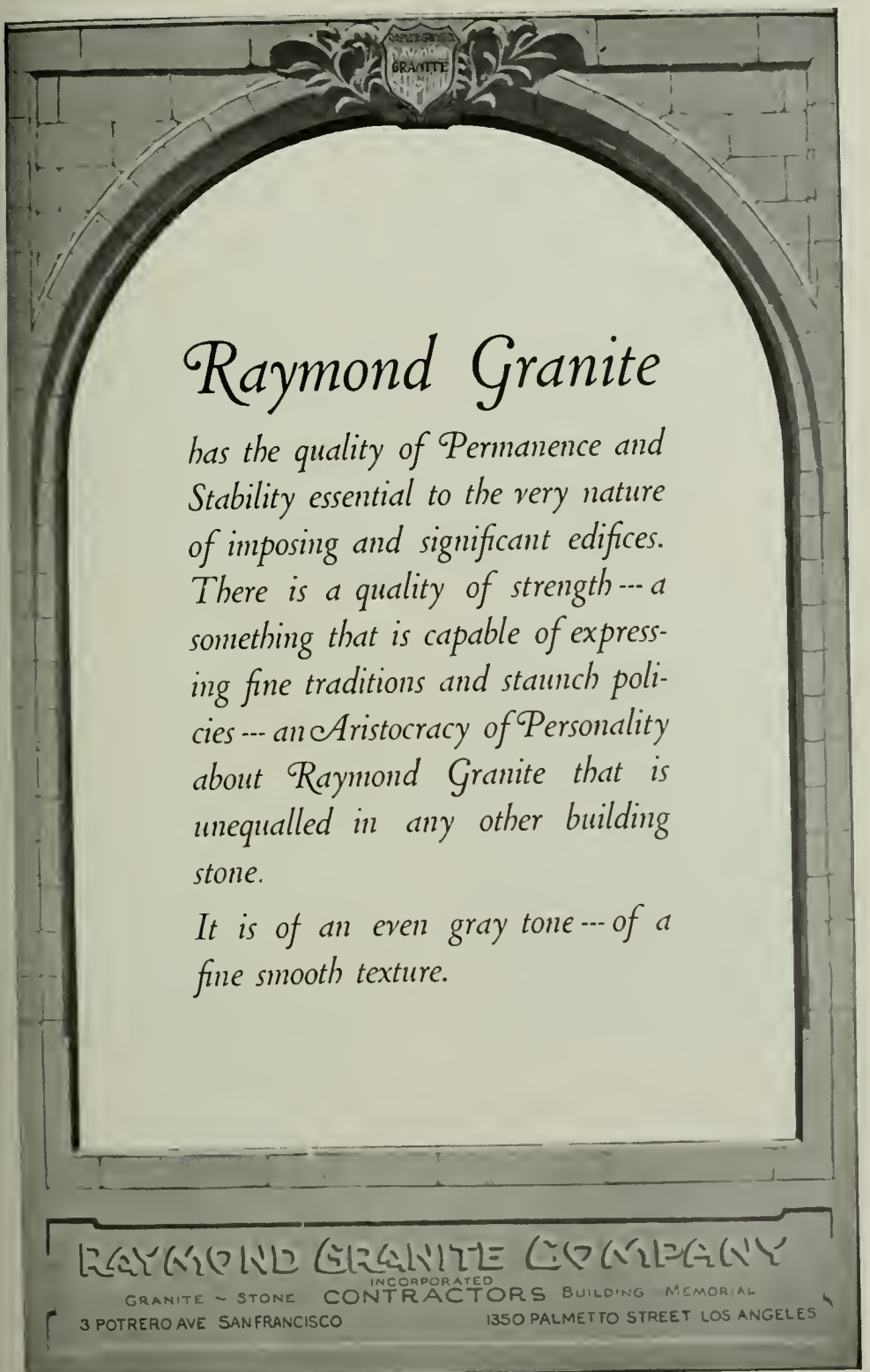
705 Atlas Building
604 MISSION ST., SAN FRANCISCO
Phone Douglas 9063

Builders' Exchange
351-12th ST., OAKLAND
Phone Lakeside 6750

DETROIT STEEL PRODUCTS CO., Detroit

251 Kearny Street, San Francisco Phone Sutter 1250

Pacific Coast Branch Factory at Emeryville



Raymond Granite

has the quality of Permanence and Stability essential to the very nature of imposing and significant edifices. There is a quality of strength --- a something that is capable of expressing fine traditions and staunch policies --- an Aristocracy of Personality about Raymond Granite that is unequalled in any other building stone.

It is of an even gray tone --- of a fine smooth texture.

RAYMOND GRANITE COMPANY
INCORPORATED
GRANITE ~ STONE CONTRACTORS BUILDING MEMORIAL
3 POTRERO AVE SAN FRANCISCO 1350 PALMETTO STREET LOS ANGELES

Wilson Hygienic Wardrobes, with disappearing doors, in St. Paul's School, Providence, R. I. A. J. Murphy, Arch. Note ventilating grilles in doors.

The same type wardrobe with rolling fronts. Note that they are always under the teacher's eye. These particular wardrobes are built in convenient recess in wall.

These savers *of* space will appeal *to* your sound judgment

MANY newly-built schools have entirely omitted separate cloakrooms and depend solely on Wilson Hygienic Wardrobes. Others have abandoned the out of sight, poorly ventilated cloak rooms and now use the Hygienic Wardrobe because of the space saved.

One that is perfectly ventilated and sanitary and that can be enlarged when necessary.

If one of you would like to talk wardrobes, one of us would like to talk with you. Or we will send you a catalog now.

The J. G. Wilson Corporation
621 N. Broadway, Los Angeles
1 East 36th Street, New York
Offices in Principal Cities

Established 1876
Wilson
DOORS - PARTITIONS - BLINDS
WARDROBES
THE J.G.WILSON CORPORATION
NEW YORK CITY

for Service, specify—

McCABE No. 5 Elevator Door Hanger

Simple

Strong

Silent

WRITE FOR OUR "BLUE BOOK"

THE McCABE HANGER MFG. COMPANY

W. H. Steel, Agt.
LOS ANGELES, CAL.

425 W. 25th St.
NEW YORK CITY

Rear Elevation and Light Court

Patterson Building, Fresno, Calif.

R. F. Felchin Co. Architects and Builders

More Light

is obtained for offices on the rear and alley elevations and in the light courts of this building because they have installed

METPRODCO

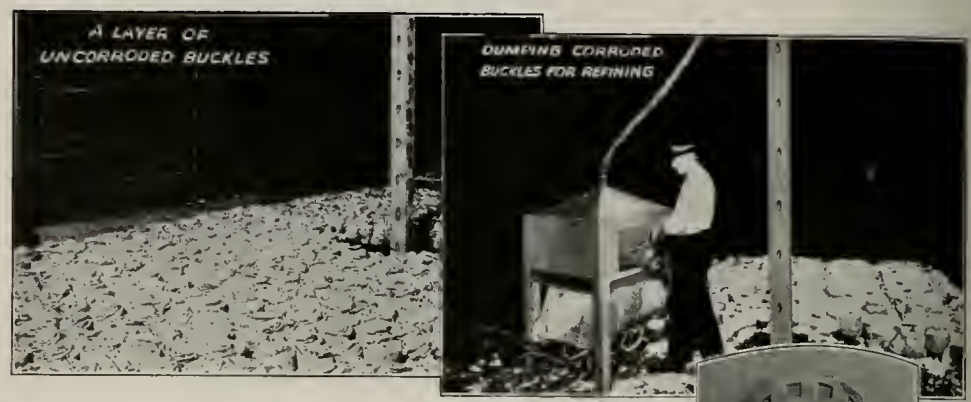
Type "G" Double Hung STEEL SASH

FURNISHED WITH UNDERWRITERS' LABEL
MADE FROM "KEYSTONE" COPPER STEEL

UNITED STATES METAL PRODUCTS CO.

330 Tenth St., San Francisco, Calif.
Lumber Exchange, Seattle, Wash.
Exchange Bldg., Portland, Ore.
Bank of Italy Bldg., Los Angeles, Calif.
Paulsen Bldg., Spokane, Wash.
Provident Bldg., Tacoma, Wash.

No. 3 of a Series on the Manufacture of Paint and Varnish



The Corrosion of Pioneer White Lead

The old Dutch process of lead corrosion, developed 400 years ago in the Netherlands, has never been improved upon, nor equaled, as a method of producing the purest and most opaque "white" lead.

In this process, pure metallic lead, cast into "buckles," is placed in specially shaped earthenware pots designed to hold weak acetic acid in the bottom out of contact with the lead. Alternate layers of these pots of buckles, acid and fermenting tan bark are stacked in large bins and kept at a temperature of about 170° F. for 100 days, by the fermenting tan bark. During this interval the metallic lead is first changed to lead acetate and then to chemically pure basic lead carbonate.

Pioneer White Lead, corroded in our own plant by the old Dutch process, insures Fuller Quality.

Lead buckle before and after corrosion by the old Dutch process.

Consult our service department, for specifications and samples showing standard or special finishes, or to help solve individual problems of surface protection and decoration. This service does not obligate you.

Write to Dept. A-1 for an interesting and informative booklet on the manufacture of white lead

W · P · FULLER & CO.
301 Mission Street, San Francisco
21 Branches in Pacific Coast Cities - Factories: San Francisco and Los Angeles

FULLER
PAINTS Since '49 **VARNISHES**

BOWSER

For 17 years we have maintained Pacific Coast offices, with complete service departments, and so we know Pacific Coast installation problems.

Whether your need is for private garage or big industrial plant, we are ready to help you satisfy the owner.

We will make your problem our problem. Call us by telephone or telegraph.

TANKS **DEPENDABLE** PUMPS

BOWSER ESTABLISHED 1885

Sales and Service Offices and Representatives Everywhere
612 Howard St., San Francisco

Pump and Tank Headquarters
Fort Wayne, Indiana
722-3 New Bank of Italy Building, Los Angeles

Why Take a Chance? An Investment With Protection is Better Than a Risk

YOU are taking a big chance if your building has unprotected window openings. It is not only constantly threatened by the buildings adjoining, but a fire within is quite likely to burst out of one window and re-enter through another. Recent fires have demonstrated this danger.

Kinnear Steel Rolling Shutters are not an experiment; they have been through the fire test and have made a wonderful record. Why take a chance when you can turn a risk into an investment?

Our illustrated book, "Exposure Hazard and Window Protection," tells about the protection and the investment. A copy will be sent upon request.

KINNEAR ROLLING · DOORS

THE KINNEAR MANUFACTURING COMPANY
661-671 FIELD AVENUE
COLUMBUS, OHIO

work

Work — and lots of it — characterizes the building trades. It is the capacity of

GUNN, CARLE & CO.

for hard work, its readiness to meet the emergency, its unflagging zeal, that give architects and builders confidence that the job will be well done when they turn to this organization for fabrication and installation of

Steel Bars

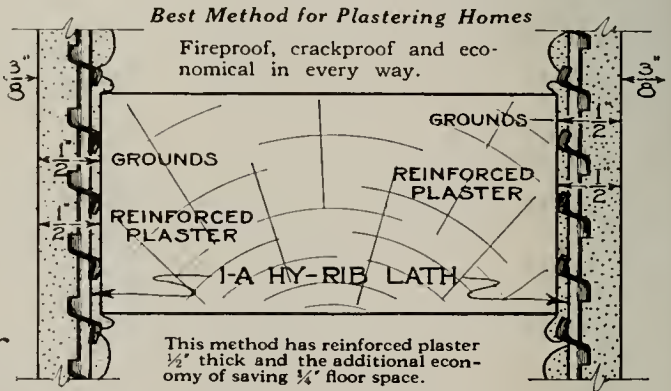
444 Market Street
Phone Sutter 2720

GUNN, CARLE & CO. SAN FRANCISCO

Make the home fireproof

Best Method for Plastering Homes

Fireproof, crackproof and economical in every way.


GROUNDS
GROUNDS
REINFORCED PLASTER
REINFORCED PLASTER
1-A HY-RIB LATH
This method has reinforced plaster ½" thick and the additional economy of saving ¼" floor space.

Specify TRUSCON 1-A METAL LATH with ½" grounds which is available at a cost comparable with Wood Lath.

Ask us for detailed information

TRUSCON STEEL COMPANY

Chas. Halloway, Branch Manager
709 MISSION ST. Phone Douglas 7135 SAN FRANCISCO

BUILDING FOR WALTON N. MOORE DRY GOODS COMPANY, SAN FRANCISCO
Geo. W. Kelham, *Architect* Foundation Company, *Builders*

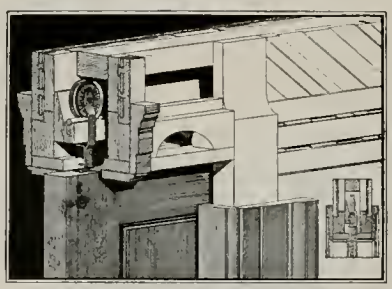
FURRING CHANNELS
CORNER BEAD and ARMCO IRON

Herringbone
RIGID METAL LATH

Let us tell you the many advantages of
HERRINGBONE

The General Fireproofing Co.

20 Beale Street, San Francisco



The most efficient door---

is the door that occupies minimum space and can always be depended upon to operate smoothly and quietly. You'll find these qualities in every door installed with

PITCHER DOOR HANGERS

Our mill facilities enable us to quote you attractive prices on doors, sash and millwork of all kinds.

Require no extra thickness of wall. Frames fit inside of 5½-inch partition. Completed frames delivered to you, ready to set in position in wall. We manufacture in large quantities and can effect substantial savings for contractors and builders. It will pay you to specify "Pitchers."

NATIONAL MILL & LUMBER CO.

318 MARKET STREET, SAN FRANCISCO 9

GOODS OF HM&S QUALITY

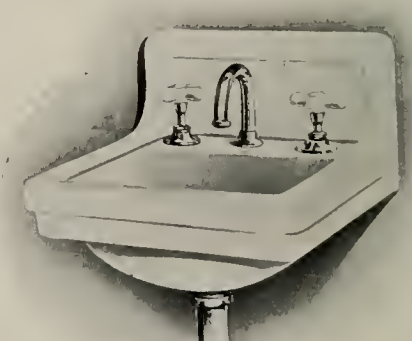
This TRADE MARK means much to the conscientious Architect and Builder

It means a satisfied client

High-Grade Plumbing Fixtures

Holbrook, Merrill & Stetson

64 SUTTER STREET
SAN FRANCISCO



When writing to Advertisers please mention this magazine.

Washable Hospital Walls

The Portland Sanitarium, Portland, Oregon
Claussen & Claussen, Architects

In the Portland Sanitarium pictured above, Bass-Hueter Satin Egg-Shell Finish was used throughout on the walls of halls, bedrooms, steam rooms, showers and kitchens. This finish is particularly suited to the walls and woodwork of hospitals because it is absolutely washable. Manufactured by a process exclusive with us, Bass-Hueter Satin Egg-Shell Finish is unequaled in appearance and hygienic qualities. It comes in white, and colors that are not affected by lime or alkali.

Bass-Hueter Satin Egg-Shell Finish

has also been used in the following hospitals:

Multnomah County Hospital, Portland, Oregon.
Swedish Hospital, Seattle, Wash.
Stanford University Hospital, San Francisco, Calif.
St. Luke's Hospital, Centralia, Wash.
Hahnemann Hospital, San Francisco, Calif.
Union Iron Works Hospital, San Francisco, Calif.
St. Mary's Hospital, Reno, Nevada.

Write for our architectural folder, giving further information on Egg-Shell Finish for hospitals, homes and public buildings.

BASS-HUETER PAINT CO.

SAN FRANCISCO

LOS ANGELES SEATTLE

PORTLAND TACOMA OAKLAND
HOLLYWOOD FRESNO PASADENA
LONG BEACH SANTA ANA HONOLULU, T. H.

Specify HANDY FLUSH VALVES

It is NON-CLOGGING

It functions perfectly with any make or kind of bowl.
Gives perfect cleansing flush — washes bowl clean.

Model A—Indirect Flush: For residences served by one-half inch supply pipe.

Model B — Direct Flush: For hotels, office and other buildings served with three-quarter inch or larger supply pipe.

Write for complete catalogue.

HANDY SELF-CLEANING FLUSH VALVE CO.
731 FOLSOM STREET, SAN FRANCISCO, CAL.
Demonstration in Universal Exhibits Monadnock Bldg., San Francisco

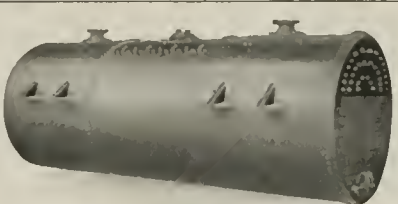
ALL CAST IRON—3 Sizes (3, 5, and 7 Sections)

RA-DO FUMELESS GAS RADIATORS

The Ideal "Year-Round" Heating System
For The Home—New or Old

Easiest and Cheapest to Install
Lowest Operating Cost

POTTER RADIATOR CORPORATION
5954 Pasadena Ave., LOS ANGELES
393 Sutter St., SAN FRANCISCO
1700 San Pablo Ave., OAKLAND



POWER AND HEATING BOILERS

STEEL TANKS, STACKS, BREECHINGS, SHEET AND PLATE WORK
MACHINERY AND IRON CASTINGS

MAIN IRON WORKS

Main Office and Works: 7th, DAGGETT AND 16th STS. San Francisco, Calif.
Telephone Market 752-753

The Scientific American says:

MADE OF ELATERITE M.O.E. MADE OF ELATERITE

"The Paint That Won't Come Off"

For Waterproofing Basements — Walls

FOR ROOFS — TANKS — STACKS
CORNICE—PIPE—BRIDGES—PILING

Specified for New
Stockton Roundhouse, Western Pacific Ry. Co.

Contains / No Tar \ No Asphaltum

U. S. Elaterite Products Co. of the Pacific
AMERICAN NATIONAL BANK BUILDING
Telephone Sutter 4810 San Francisco

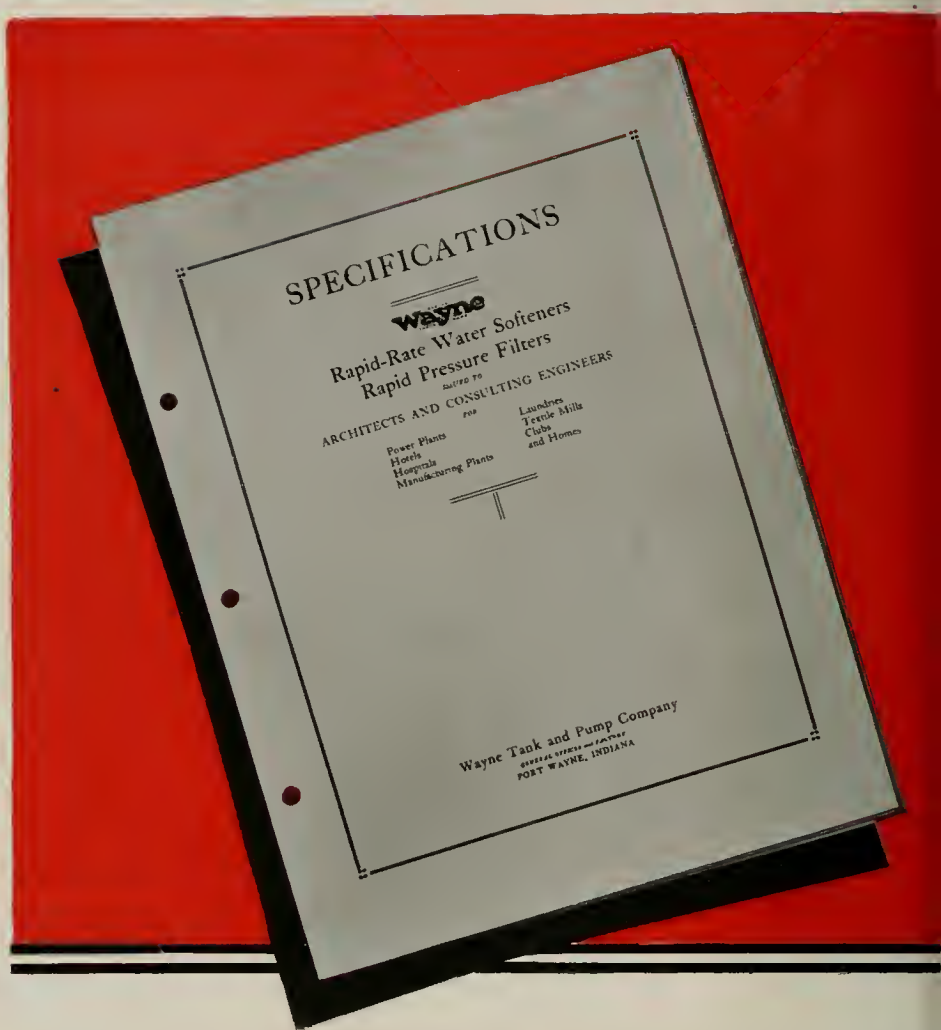
There's the "Button"

Buttonlath is a small thing to put in your specifications but a big thing to put behind your walls

Buttonlath Mfg. Co.
207 Balboa Bldg.,
San Francisco, Cal.

Buttonlath

Button Your Faith to Buttonlath



We have prepared a thoroughly standard booklet of specifications for architects and engineers. *Some day, probably soon, one of your clients is going to ask you about the Wayne Water Softener.* Be prepared. Send for this standard booklet today. Write now.

Way

Symbol of Satisfaction

Soft Water
Now in Thousands of Homes

The Wayne Water Softener is a modern utility for the home and the institution.

Thousands of them are in use in homes, institutions and hotels all over America.

When you plan a home or a building to shelter many, do not overlook the disadvantages of hard water and the very many advantages of soft water.

Make yourself acquainted now, with the boon soft water proves to the home, the hotel, or the institution. Even more important, learn how greatly it saves.

This saving is important in the home, especially in the laundry. It is even more important in the hotel or institution.

Wayne Tank & Pump Co., 862 Canal St., Ft. Wayne, Ind.

Wayne Tank & Pump Co. of Canada, (Ltd.), Toronto, Ont., Canada
Wayne Tank & Pump Company, 9 Kingsway, London, W. C. 2, England

Division Offices in: Atlanta, Birmingham, Boston, Chicago, Cincinnati, Cleveland, Columbus, Dallas, Dayton, Des Moines, Detroit, Indianapolis, Jacksonville, Kansas City, Milwaukee, Minneapolis, New York, Omaha, Peoria, Philadelphia, Pittsburgh, San Francisco, St. Louis and South Bend

Warehouses in: Philadelphia and San Francisco

An International Organization with Sales and Service Offices Everywhere

EG. U.S. TRADE MARK

Wayne equipment is manufactured completely in one plant and every phase of its operation is backed and guaranteed by the largest institution in the world producing water softeners, with 30 years' experience and a sales and service organization international in scope.

HUBBELL

Duplex Convenience Outlet No. 6257 with plate No. 6258 assembled

Profile view, composition duplex convenience outlet No. 5890; also offered in porcelain No. 6257.

Any standard parallel-bladed or tandem-bladed plug will fit any Hubbell outlet.

Single round plate convenience outlet with 2 ¾ inch plate assembled, No. 6282; with 3 1/8 inch plate assembled No. 6283.

CONVENIENCE OUTLETS

Provide the builder with a complete line of standard flush receptacles designed and made for dependable service wherever installed.

Firm, even electrical contact is insured by double contact springs concealed back of double T slots. Bodies of porcelain or composition are 1-inch deep and fit standard 1½-inch outlet boxes. Terminals are large and easily wired.

Hubbell Duplex Convenience Outlets furnish two sets of independent double T slot connections in the space normally occupied by one.

Let Hubbell Wiring Devices build good will for you. Write for full information about this complete line.

HARVEY HUBBELL INC
ELECTRICAL WIRING DEVICES
BRIDGEPORT CONN. U.S.A.

HUBBELL ELECTRICAL WIRING DEVICES

Old Mission Portland Cement Company

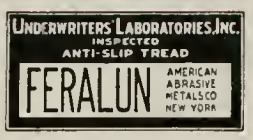
Each shipment of "OLD MISSION" Portland Cement is guaranteed not only to equal but to surpass all requirements of the standard specifications for Portland Cement as adopted by the U. S. Government and by the American Society for Testing Materials. A Guarantee Certificate is mailed with the bill of lading of each car, giving number of car, date packed, and number of barrels, over the signature of the chief chemist.

8000 SACKS DAILY

SALES OFFICE:
MILLS BLDG., SAN FRANCISCO
PHONE SUTTER 3075

PLANT:
SAN JUAN, CAL.

SAFETY TREADS



Affords the maximum of safety and there are NO GROOVES to catch the heels

PACIFIC MATERIALS CO.

525 Market Street, San Francisco, Calif.

PALACE HARDWARE CO.

Good Buildings Deserve Good Hardware

581 MARKET ST.

CORBIN

6063 SUTTER

"San Francisco's Leading Hardware Store"

George S. MacGruer
Robert M. Simpson
} Members of Builders Exchange

MacGruer & Simpson

CONTRACTING PLASTERERS

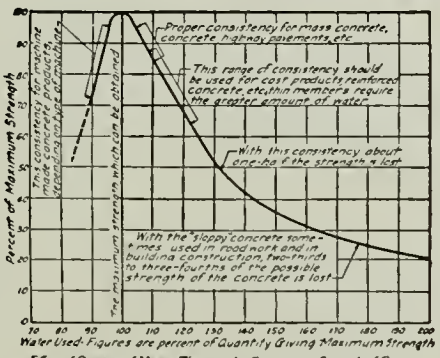
PLAIN AND ORNAMENTAL

Cement, Stucco and Artificial Stone

Phone Garfield 512

266 Tehama Street, San Francisco

When One Pint of Water Wastes Two Pounds of Cement


Proper consistency for mass concrete, concrete highway pavements, etc.
This range of consistency should be used for cast products reinforced concrete, etc., thin members require the greater amount of water
With this consistency about one-half the strength is lost
With the "sloppy" concrete sometimes used in road work and in building construction, two-thirds to three-fourths of the possible strength of the concrete is lost
The maximum strength which can be obtained
This consistency for machine made concrete products, especially cast products of pavements
Percent of Maximum Strength
Water Used: Figures are percent of Quantity Giving Maximum Strength

Effect of Quantity of Mixing Water on the Compressive Strength of Concrete
NOTE. In general construction, the maximum strength can rarely be obtained, but it is possible to obtain 70 to 90 per cent of the maximum strength without additional expense by restricting the quantity of mixing water.

Observe this curve closely. It shows impressively the effect of the quantity of mixing water on the strength of concrete.

It is now known that excess mixing water, not only weakens concrete, but that it is actually wasteful of cement. One pint of water more than necessary in a one-bag batch decreases the strength and resistance to wear as much as though two or three pounds of cement were left out.

Here is a fact, which if brought home to the superintendent and the foreman, can be of great practical value in raising quality on the job.

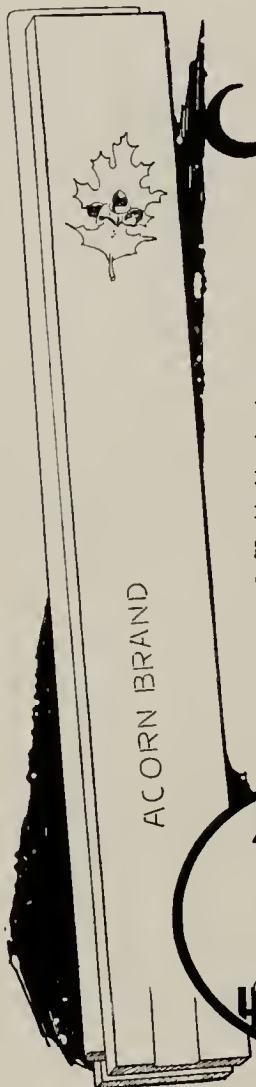
Wouldn't you like to have, right at hand for quick reference, a practical manual which tells how the quantity of mixing water can be closely controlled, so as to give concrete greater strength without using any more cement?

Then write today for our free booklet, "Concrete Data for Engineers and Architects." We will be glad to send you extra copies for superintendents and foremen.

Take full advantage of the service the Portland Cement Association has to offer. One of the District Offices of the Association is always near you. Get acquainted with it.

PORTLAND CEMENT ASSOCIATION
A National Organization
to Improve and Extend the Uses of Concrete

Atlanta	Denver	Kansas City	New York	San Francisco
Birmingham	Des Moines	Los Angeles	Parkersburg	Seattle
Boston	Detroit	Memphis	Philadelphia	St. Louis
Chicago	Helena	Milwaukee	Pittsburgh	Vancouver, B.C.
Dallas	Indianapolis	Minneapolis	Portland, Oreg.	Washington, D.C.
	Jacksonville	New Orleans	Salt Lake City	



Now—

A Quality Flooring you can Identify

WHERE contractors have used a flooring that has given satisfaction, they naturally want the same material for the next building. That's why ACORN Hardwood Flooring is labeled so you will know you are getting the same reliable American-grown oak floors.

ACORN FLOORING does give satisfaction, and it is labeled so that you may specify and identify it.

Its uniformity, its careful milling, its even color and its beautiful grain are well known The name stamped on each bundle is your guarantee of ACORN quality.

ACORN HARDWOOD FLOORS OAK

Reliable Lumber Dealers everywhere sell ACORN Oak Flooring

STRABLE HARDWOOD COMPANY

DISTRIBUTORS

STRABLEWOOD QUALITY HARDWOODS

537 First Street Oakland, California

For Casements and Windows Specify CRITTALLOY — the Copper-Bearing Steel

CRITTALL

Steel Casements

Crittall installation in the W. R. Flint residence, Pasadena, California — Johnson, Kaufman & Coate, Architects

Coast Representatives

J. E. Dwan
616 S. Utah St.
Los Angeles

Waterhouse-Wilcox Co.
523 Market St.
San Francisco

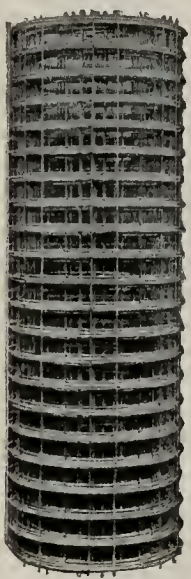
F. T. Crowe & Co.
508 Westlake Ave., N.
Seattle

McCrakin-Ripley Co.
45 Fourth St.
Portland

The building of Crittall casements, windows and French doors has back of it the authority and knowledge of generations in leadership of this craft. ¶ Built by hand, in various designs, their beauty, grace and enduring utility is enhanced by workmanship that has come down as a tradition with this name.

CRITTALL PATENTED UNIVERSAL

CRITTALL CASEMENT WINDOW CO., *Manufacturers,* DETROIT



Clinton

Electrically welded Wire Fabric

The Ideal Mesh Reinforcement for Concrete

Immediate Shipment from Stock
San Francisco
Los Angeles
Seattle

Wickwire Spencer Steel Corporation

SAN FRANCISCO
144 Townsend St.
Douglas 1421

LOS ANGELES
316 E. Market St.
Pico 4851

Recent

Office Buildings

STANDARD OIL
SAN FRANCISCO

MATSON
NAVIGATION CO.
SAN FRANCISCO

CALIFORNIA STATE
LIFE INSURANCE
COMPANY
SACRAMENTO

Lindgren & Swinerton, Inc.

New Standard Oil Building
225 Bush Street
On the Sixth Floor

Specify

"Merced" Roofing Tile

BURNED clay roofing tile is now being used for almost every type of architecture, educational and business institutions, churches, homes, industrial plants.
Besides being fireproof, a properly laid tile roof is free from leaks and will not call for repairs.

CALIFORNIA POTTERY CO.

579-583 MILLS BLDG.
SAN FRANCISCO, CALIF.
Merced Oakland Fresno

We also manufacture the following products:

Sewer Pipe and Fittings — Chimney Pipe and Fittings — Flue Lining — HollowBuilding Tile—Partition Tile—Drain Tile

BIRCHFIELD
REG. U.S. PAT. OFF.

We lay our cards on the table, as we have found the

ARCHITECTS

unprejudiced and willing to investigate the merits of improved equipment.

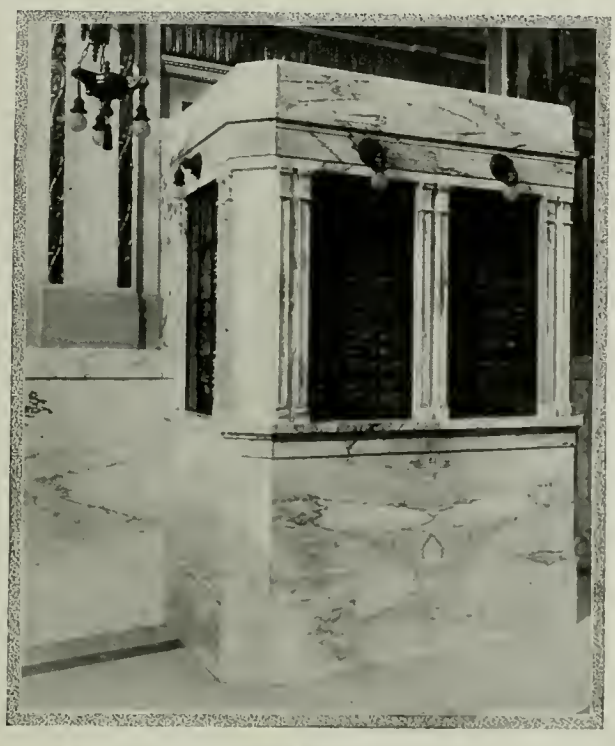
Ask us why

BIRCHFIELD

STEEL HEATING BOILERS

Save their own cost in fuel economy.

WALTER S. LELAND
(California Representatives)
208 Balboa Bldg., San Francisco
Los Angeles, Tacoma, Wash.



MATCHED PANELS OF MADRE VEINED ALABAMA
KEITH'S THEATRE, CLEVELAND, O.
C. L. and G. W. Rapp, Architects

Madre Veined Alabama

It is the irregular regularity of the veining in Madre Veined Alabama that gives it its peculiar charm.

Its often bizarre black veinings on a cream white background, when laid in matched panels, are unique in domestic marbles.

It has been classed as America's Povanazzo marble, so nearly does it simulate that beautiful material.

We would be glad to send you a picture of this interesting marble in its natural colors, showing the beauty of its matched veinings, if you will write us today.

TOMPKINS-KIEL MARBLE COMPANY

505 FIFTH AVENUE
NEW YORK CITY

DISTRIBUTORS MARBLE-STONE

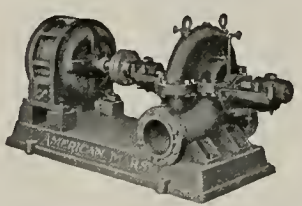
CHICAGO
PHILADELPHIA
SAN FRANCISCO

C. F. PARKER

BUILDING CONSTRUCTION

251 Kearney Street San Francisco Phone Douglas 5722

PUMPING MACHINERY



"AMERICAN-MARSH"
House, Sump *and*
Fire Pumps

FOR ALL SPECIFICATIONS

SIMONDS MACHINERY CO., 117-121 New Montgomery Street
PHONE KEARNY 1457 SAN FRANCISCO

Specify VLAARITE *Flat Oil Finish*

ENAMEL UNDERCOATING AND FOR WALLS

VLAARITE is the result of years of experiment and untiring efforts to produce a perfect flat white that would be a worthy member of the Oakley Paint Family. It stands supreme in its class and your client will certainly be pleased with the results.

OAKLEY PAINT MFG. CO.

PAINTS — VARNISHES — ENAMELS — KALSOMINES

727 Antonia St., Los Angeles 833 Hearst Bldg., San Francisco

Pack your Radiator Valves with

Palmetto Twist Packing

It can be unstranded to fit any size Valve. It does not get hard

H. N. COOK BELTING CO.

401-433 Howard St., San Francisco, Cal.

25,000 square yards
Armco-Ingot Iron Herringbone Lath used.
Also Ingot Iron Cornices

California

Commercial Union Bldg.
San Francisco
Geo. W. Kelham, Architect

A Man's Work is His Monument

SIR CHRISTOPHER WREN, England's famous architect, dead two hundred years, still lives in his works.

On a small tablet over his grave is this line: **Reader, if you seek his monument, look around you.**

Sir Christopher builded for permanency with materials enduring. And that their work, too, may be enduring, many architects specify nothing but rust-resisting Armco-Ingot Iron for all sheet metal work.

Thus they build for themselves while rendering the greatest service to their clients.

Where to Order: San Francisco Warehouse, Tenth and Bryant Sts.; California Cornice Works, Los Angeles; A. M. Castle Co. of Washington, Seattle; Spokane Sheet Metal Supply Co., Spokane

ARMCO TRADE MARK **INGOT IRON**

The American Rolling Mill Co.

Middletown, Ohio

When writing to Advertisers please mention this magazine.

Evans Vanishing Door

Wardrobes are the practical and efficient installation for the saving of floor space, lowering the cost of construction and upkeep, and making for the convenience and sanitation of THE MODERN SCHOOL.

WARDROBES, Class E, have Laminated Backs, Ends and Divisions, and with Evans Process Hollow Sanitary Doors, hung on double pivoted arms, without guides tracks or rollers, swing easily and silently. They cannot stick or bind. Made with or without Blackboards. Hardware can also be purchased separately.

More Than a Million Hang Their Wraps in Evans Vanishing Door Wardrobes

Trade Mark
VANISHING DOOR
U. S. Reg.

Catalog
"PICTURES THAT TALK"
Sent on Request

W. L. EVANS 700 Block B **Washington, Ind.**

Every Room Adds at Least $1,200 to the Cost of a Home or Apartment House

Hotel Cecil, San Francisco
Equipped with Wall Beds

Portal Wall Beds

are real space and cost savers. Those who would build wisely in these days of flunctuating prices, provide for PORTAL WALL BEDS.

MARSHALL & STEARNS CO.
WALL BEDS
"HIGHEST AWARD ALWAYS"

1152 Phelan Building
San Francisco

1774 Broadway
Oakland

Dr. J. W. Calkins House, Oakland, California — Maybeck & White, Architects

ENGLISH BROAD PAN ROOF TILES

FURNISHED AND LAID BY

GLADDING, McBEAN & CO.

FOUNDED 1875

CROCKER BUILDING,
San Francisco, California

TROPICO POTTERIES, INC.,
Glendale, Los Angeles, California

When writing to Advertisers please mention this magazine.

FESS SYSTEM

The true TURBINE.

READ WHAT ONE OF THE LARGEST REALTY FIRMS ON THE PACIFIC COAST THINK OF OUR EQUIPMENT AND REAL "honest-to-goodness" SERVICE

"We do not hesitate to say that our experience with the Fess Rotary Burner is the most satisfactory in every way. We have had quite a number of the Burners in operation and have been satisfactory, although the repairs have been more, due possibly to the fact that they have had several different representatives here in our city and the service behind them has not been as good as that behind the Fess Burner, which have had the same agency for a period of ten or twelve years and has been eminently satisfactory."

218-220 Natoma Street San Francisco

Phones Sutter 6927-6928

SPECIFY AND INSIST UPON FESS SYSTEM

934 Santee Street Los Angeles

Bdwy 1375

AUTHORIZED AGENCIES AND SERVICE IN ALL PRINCIPAL CITIES

STATIONARY installations of the COEN SYSTEM OF MECHANICAL OIL BURNING include over 100,000 horsepower in plants of the following companies: Standard Oil Company, Shell Oil Company, Associated Oil Company, Gulf Refining Company, Aluminum Ore Company, Prairie Pipe Line Company, Arizona Copper Company.

It is used by the world's largest oil companies because it is the most economical oil burning system for use in high-pressure power plants.

The Coen System of Mechanical Oil Burning was specified for the new Community Hospital for San Mateo County, W. H. Toepke, architect. These oil burners are to be used on two Stirling Type Boilers of 110 h. p. each. They are equipped with Complete Automatic Control.

Our engineers will be glad to call and give you complete data and specifications

COEN COMPANY, Inc.

112 MARKET STREET, SAN FRANCISCO

Phone Sutter 2838

Los Angeles, Cal. 428 Story Bldg.

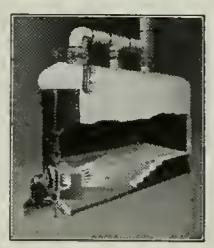
Seattle, Wash. 303 Railroad Ave., South

Portland, Ore. 51 First Street

JOHNSON'S ROTARY CRUDE OIL BURNER

Can be installed in any BOILER or FURNACE

Gives Satisfactory Results
Simple to Operate—Automatic—Safe
Let us tell you more about this Oil Burner.



BURNER IN OPERATION

S. T. JOHNSON CO.

1337 Mission Street
San Francisco
Phone Market 2759

940 Arlington Street
Oakland
Phone Piedmont 2815

Agencies: SEATTLE LOS ANGELES FRESNO SAN DIEGO SACRAMENTO

SIMPLEX
TRADE MARK

SIMPLEX BURNERS

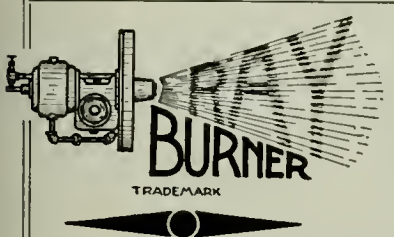
For High or Low Pressure Boilers, Water Heaters, Kiln Dryers, Furnaces, Etc. Operated by Fractional H. P. Motors. Guaranteed for Efficiency and Durability.

BUNTING IRON WORKS

Factory Berkeley

1215 FIRST NATIONAL BANK BLDG.
SAN FRANCISCO Phone Sutter 3225

Member of the Oil Burners Manufacturers' Association of California



Rotary Fuel Oil Burners

FOR HEATING, POWER PLANTS And Industrial Uses

ADAPTED FOR ANY TYPE OF BOILER OR FURNACE —HIGH OR LOW PRESSURE, 6 to 600 h. p.

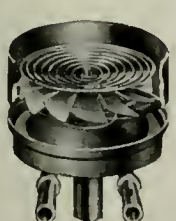
W. S. RAY MANUFACTURING CO.
MANUFACTURERS OF RAY FUEL OIL BURNERS

OFFICE AND SALESROOM:
Rialto Building, SAN FRANCISCO
Phone Douglas 8079

Distributors in all Principal Cities

OAKLAND BRANCH
25th and San Pablo Avenue
Phone Oakland 3944

Specify "ROTARY"—the Oil Burner with the Revolving Grate



Produces the highest efficiency in all standard furnaces, either steam, hot water or hot air, because of the short high temperature flame.

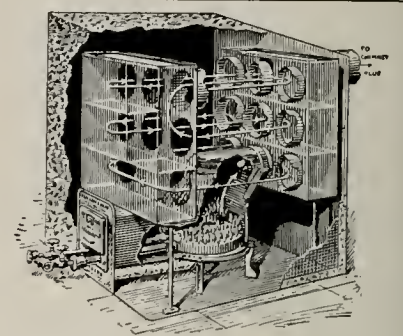
ROTARY OIL BURNER COMPANY, Inc.
159-12th STREET, OAKLAND PHONE OAKLAND 2994

JOINTS DO NOT LEAK
in the
BABCOCK
"HIGH EFFICIENCY"
GAS FURNACE

Designed by gas engineers. Long fire travel. Large radiation surface. No condensation. Leaks are avoided because there is no corrosion.

5 year guarantee

No. 50-80


Showing Long Fire Travel in No. 50-80

Distributors in large cities of California
FRANK KLIMM CO.
San Francisco
PACIFIC GAS & APPLIANCE CO.
Oakland
BEACON LIGHT COMPANY
and
SOUTHERN CALIFORNIA GAS CO.
Los Angeles

C. B. BABCOCK COMPANY
768 MISSION STREET, SAN FRANCISCO
MANUFACTURERS AND DISTRIBUTORS OF GAS EQUIPMENT

Pump Governors
Oil-Burner Governors
Reducing Valves
Safety Valves
Oil Valves
Blow Off Valves
Boiler Feed Valves
Vacuum Pump Governors
Vacuum Regulating Valves
Oil Pumping Sets
Little Giant Improved
Oil Burners
Duplex Oil Pumps
Rotary Oil Pumps
Oil Heaters
Draft Gauges
Boiled Feed Pumps

G. E. WITT CO., Inc., Engineers
C. W. VAUGHN, President and Manager
MANUFACTURERS AND DISTRIBUTORS
862-864 Howard St. Phone Douglas 4404 San Francisco, Cal.

A. F. Edwards, Pres.
J. M. Fabbris, Vice-Pres.
J. A. Mackenzie, Secy.
Office Telephone Market 5070
Chas. F. Eisele, Asst. Mgr.
J. Rubiolo, Asst. Mgr.
D. A. Batsford, Asst. Mgr.

AMERICAN MARBLE & MOSAIC CO.
25-59 Columbia Square, San Francisco, Calif.
Near Folsom St., Bet. 6th and 7th Sts.
Factory on Water Front, South San Francisco. Phone South San Francisco 161

SA... CO
PUBLIC LIBRARY

the ARCHITECT & ENGINEER

Contents

VOL. LXXIV. SEPTEMBER, 1923 Number 3

SIERRA SCHOOL BUILDING, SACRAMENTO - - *Frontispiece*
Dean & Dean, Architects
DESIGNING AN IDEAL SUBURB - - - - - - - - 51
DISTINCTIVE CALIFORNIA GARDENS - - - - - - - 65
W. H. Ratcliff, Architect
THE SEVERANCE GARDENS, PASADENA - - - - - - 69
Johnson, Kaufmann & Coate, Architects
MODELS IN CARDBOARD - - - - - - - - - - 79
Jockemo Casassa
RELATIONSHIP OF THE ARCHITECT TO THE MILLMAN - 81
Ellis F. Lawrence, F. A. I. A.
MORE ANENT THE LOS ANGELES CIVIC CENTER - - 89
THE INNER DECORATION OF THE SMALL HOUSE - - 97
Catherine R. Gordon
RIGHT OF ARCHITECT TO DAMAGES FOR USE BY OWNER OF PLANS AND SPECIFICATIONS - - - - - - - 100
Leslie Childs
PORTLAND CEMENT STUCCO AND THE SURFACE FINISH OF CONCRETE BLOCK - - - - - - - - - - 102
Franc J. Gardner
EDITORIAL - - - - - - - - - - - - - - 106
WITH THE ARCHITECTS - - - - - - - - - - 111

Published Monthly by
THE ARCHITECT and ENGINEER Inc.
626-627 Foxcroft Building San Francisco
W. J. Kierulff, *President* — Frederick W. Jones, *Vice-President* — L. B. Penhorwood, *Secretary*

Frontispiece
The Architect and Engineer
September, 1923

SIERRA SCHOOL BUILDING, SACRAMENTO
DEAN & DEAN, ARCHITECTS

SAN FRANCISCO
PUBLIC LIBRARY

THE
ARCHITECT
AND
ENGINEER

SEPTEMBER
1923

VOL. LXXIV.
No. 3

Designing an Ideal Suburb

By J. MITCHEL THORSEN

THE colony of tenant-owned garden apartments at Jackson Heights, New York, was conceived some ten years ago. Since that time a realization of an ideal in design and construction has been brought about. Today it is possible to acquire, in spite of city congestion, gardens, broad lawns, a sunny, airy suite in a modern apartment building, and there exists a community that owes architectural beauty and variety to the foresight of its designers.

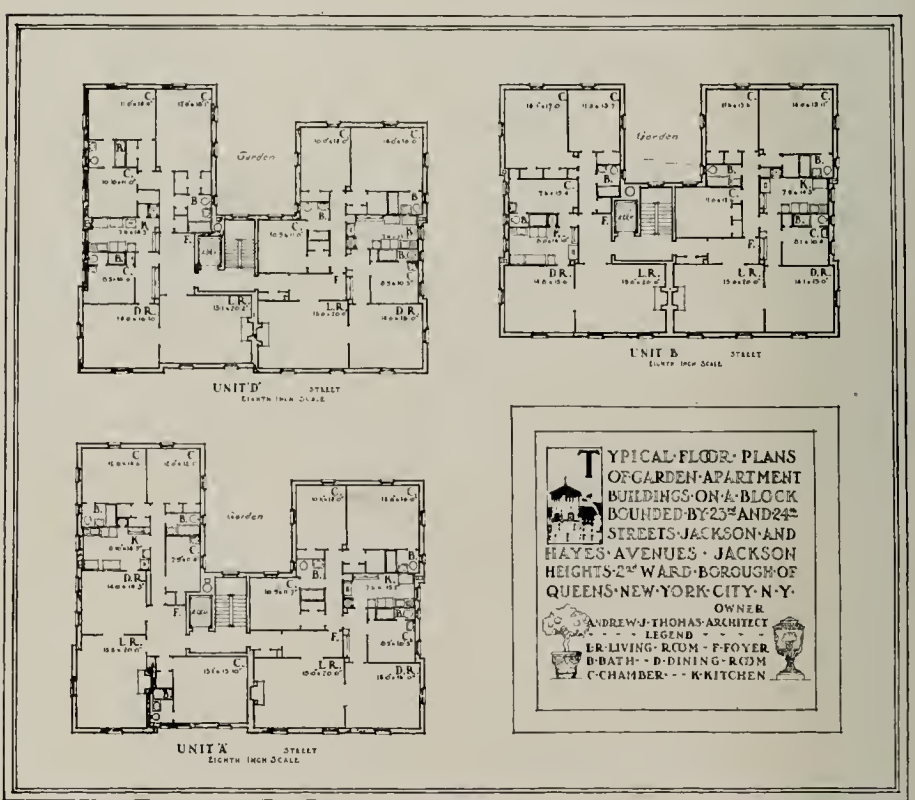
These apartments are divided into groups which have distinctive character and period. The groups are carefully laid out so that they will harmonize without the monotony of the ordinary apartment row.

Each individual group is perfect in itself. For example, the Chateau Apartments, which are distinctive and charming, were designed by Mr. Andrew J. Thomas, well-known apartment house architect, and built by the J. G. White Engineering Corporation of New York, builders of the Ritz and the Waldorf in London.

This group was constructed on the open plan and consists of a block of separate buildings, each having only two apartments on a floor. This gives a maximum of sunshine and air, as well as corner rooms and numerous exposures, like a suburban house. In the huge court formed by this arrangement is a tasteful garden filled with flowers, shrubs and long walks.

Editor's Note: In illustrating the Jackson Heights, N. Y., Community Apartments, the publishers have departed somewhat from a policy of showing only Pacific Coast architecture. Having been given exclusive privilege of presenting these pictures, we believe our Coast architects will find sufficient inspiration in the presentation to justify a deviation from an established custom. The pictures and plans should serve as an aid to architects who may have work of this character in the future.

JACKSON HEIGHTS APARTMENTS, NEW YORK
Andrew J. Thomas, Architect


Garden
UNIT D
Garden
UNIT B
Garden
UNIT A
TYPICAL FLOOR PLANS OF GARDEN APARTMENT BUILDINGS ON A BLOCK BOUNDED BY 23rd AND 24th STREETS JACKSON AND HAYES AVENUES JACKSON HEIGHTS 2nd WARD BOROUGH OF QUEENS NEW YORK CITY N Y
OWNER
ANDREW J THOMAS ARCHITECT
LEGEND
LR LIVING ROOM F FOYER
B BATH D DINING ROOM
C CHAMBER K KITCHEN

LIVING ROOM, JACKSON HEIGHTS APARTMENTS
Andrew J. Thomas, Architect

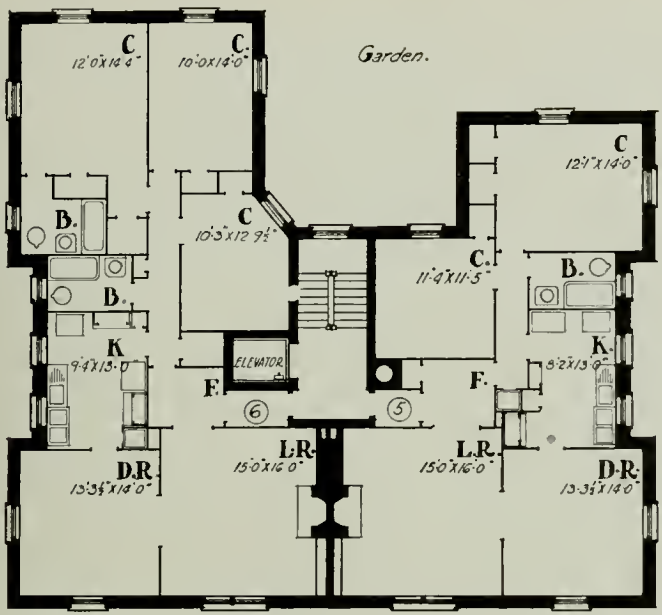
COMMUNITY CHURCH, JACKSON HEIGHTS, N. Y.

COLONIAL DOORWAY, JACKSON HEIGHTS APARTMENTS
ANDREW J. THOMAS, ARCHITECT

WIDE WALKS AND GARDENS, JACKSON HEIGHTS APARTMENTS
ANDREW J. THOMAS, ARCHITECT

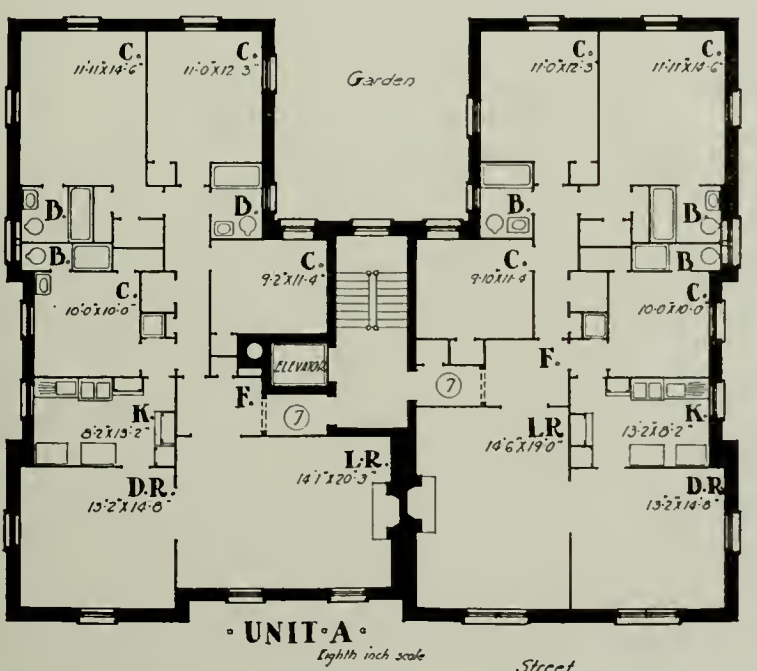
STREET VIEW, JACKSON HEIGHTS APARTMENTS
Andrew J. Thomas, Architect

GARDEN VIEW, JACKSON HEIGHTS APARTMENTS
Andrew J. Thomas, Architect



· UNIT · B ·

Eighth inch scale.



· UNIT · A ·

Eighth inch scale

PLANS, JACKSON HEIGHTS APARTMENTS
ANDREW J. THOMAS, ARCHITECT

The exterior is a close imitation of the French Chateau type. Special attention has been paid to the roof, which is of vari-colored slate with steep, picturesque towers. The silhouette is an important factor in apartment construction, because an apartment building frequently, if not invariably, stands above neighboring buildings.

Another group, of which Mr. George H. Wells is the architect, has Georgian cornices and balustrades with eighteenth century Colonial roofs and dormers. For this group, which has been named Cambridge Court, the freshman dormitories of Harvard University, built along the Charles river, have served as a source of inspiration. This group is built around a large central garden, as is the Chateau group. The garden is five hundred feet long and ninety feet wide. It has been laid out by Olmsted Brothers, landscape architects of Boston. The garden is provided with pergolas, garden seats, and terraces planted with trees and flowering plants.

A third group is building at Jackson Heights in which the towers and tile roof so frequently found in the hill towns of Italy are contrasted with a light brick wall. This group—as does each of the others—occupies an entire city block, and with towers at the corners will be both striking and picturesque.

The apartments are completely equipped. The kitchens are furnished with enameled tubs, a refrigerator, overhead drying rack, a cabinet, numerous closets and shelves, a smooth top stove, and a dumb waiter. The suites have electric fixtures and oak floors and many of them have elevator service.

The tenants of these apartments are stockholders in the corporation which owns the land and the building. This plan combines the features of the economy in apartment living and the social value of owning a home. The result is that the community of eleven hundred families at Jackson Heights has organized itself. It has a community club with tennis courts, a golf course, and playing members in many branches of sport. And the value of a community designed with an ideal in view is demonstrated by the participation in community life of most of its members.

* * * *

Electricity Has Made the Small Ice Plant Possible

Electricity has revolutionized the business of artificial ice making in the past few years. Not only has it been demonstrated to be cheaper than fuel-driven motive power, but labor and maintenance costs are much lower. Perhaps the most radical change that has been brought about is the development of the small unit, the plant of from twenty to thirty tons capacity.

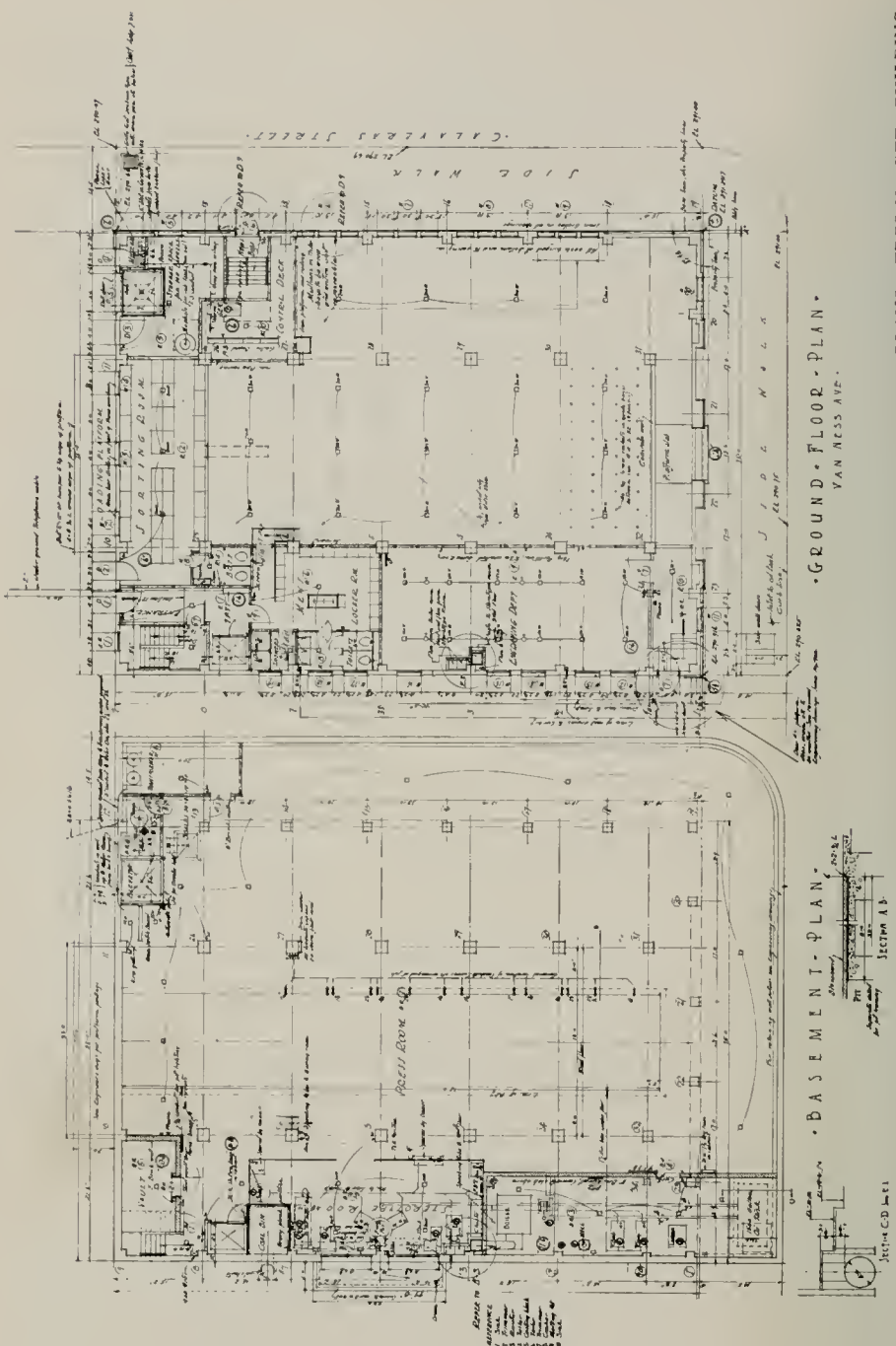
Original ice plants were steam driven and used practically all of the exhaust steam in the manufacture of "distilled water ice." As long as it was thought necessary to use distilled water, the steam engine had a great advantage over the electric motor in the ice-making field. But of late years it has been discovered that raw water can be used in the manufacture of ice. With the discovery of "raw water ice" the steam plant gradually lost this advantage and is gradually being driven from the field by the motor-driven compressor. The development about this time of the low-speed synchronous motor for direct connection to reciprocating compressors has probably been one of the most important factors in hastening the electrification of ice plants.—Journal of Electricity.

BUILDING FOR FRESNO BEE, FRESNO, CAL.
Leonard F. Starks, Architect

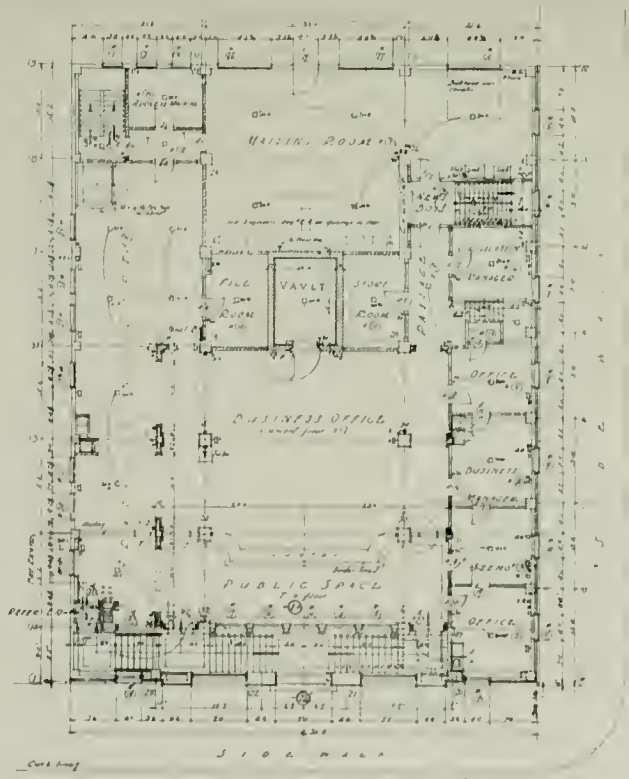
Building for the Fresno Bee

THE new home of the Fresno Bee has been planned as a complete newspaper building for James McClatchy & Co., and is located at Van Ness avenue and Calavares street, in the city of Fresno, California. The site covers 112 feet on Van Ness avenue and 150 feet on Calavares street, and the building occupies 75 by 100 feet on the corner, leaving the remainder of the property available for future additions.

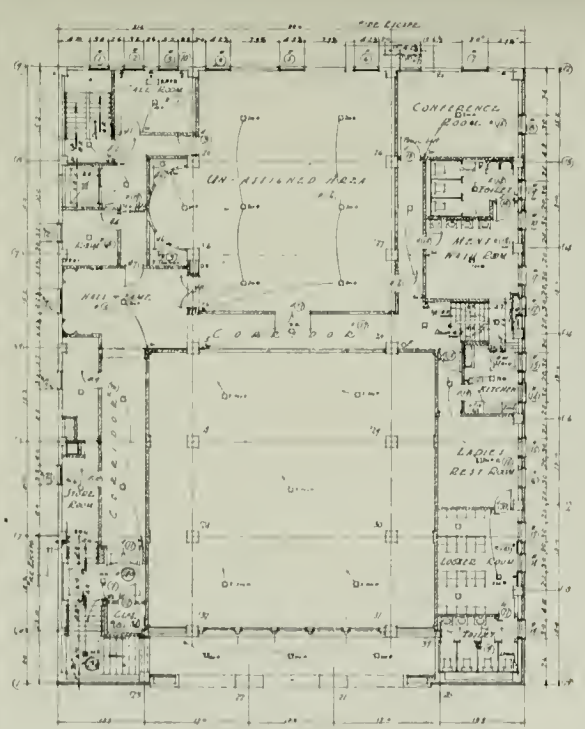
The structure itself is of reinforced concrete veneered with Cannon special design brick and cast cement. The press room is in a special pit about four feet below the basement level of the building, which is 18 feet below the sidewalk level. The first floor is located eight feet above the sidewalk level, so that the press room may have an abundance of light and air and be visible to the public from the street. The first floor of the building contains the business offices, executive offices, mailing room, advertising department and the delivery room for the newsboys, which is accessible from Calavares street. On the second floor is the editorial staff, also the reporters' room, library, etc. The third floor is devoted to the composing department. The composing room has a special system of ventilating so as to take care of all fumes, etc., directly from the linotype machines. In addition to this special ventilation, the roof slab over the composing room is flat, and upon this has been built a wooden deck supporting from two to three feet of earth and a lawn with sprinkler system. This lawn is accessible from the main elevators and stairways.



PLANS, FRESNO BEE BUILDING
LEONARD F. STARKS, ARCHITECT

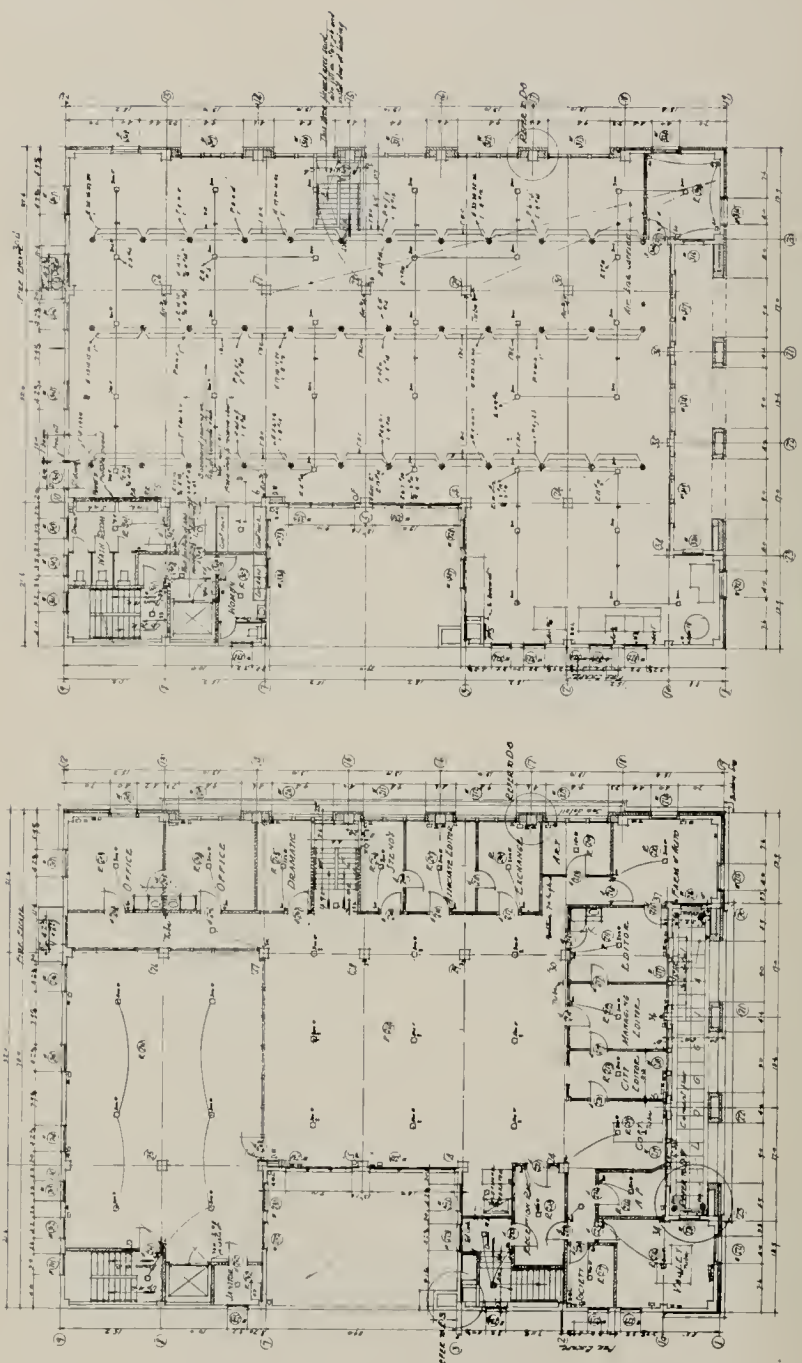


·FIRST·FLOOR·PLAN·



·FIRST·FLOOR·MEZZANINE·

PLANS, FRESNO BEE BUILDING
LEONARD F. STARKS, ARCHITECT



PLANS, FRESNO BEE BUILDING
LEONARD F. STARKS, ARCHITECT

The basement and first and second floors all have intermediate full height mezzanine stories which take care of various accessories, such as a small auditorium, rest rooms for men and women, hall of fame, lithograph department, etc. The sorting room for the call boys is located at the rear of the building on the basement mezzanine level, which coincides with the sidewalk level, and the boys are supplied directly by conveying machines from the pressroom.

The stereotype department on the composing room floor has direct service to the pressroom by means of an electric dumbwaiter and passenger elevator. The entire building is steam heated and equipped with a forced draft ventilating system.

The main business office is two stories, with caen stone walls, marble and tile floor and wood beam ceiling. The entrance stairway from Van Ness avenue is treated with a marble wainscoting on the walls, an ornamental vaulted ceiling and marble and tile stairs and platform. The two-story arched loggia facing Van Ness avenue, and upon which some of the editorial offices border, is treated in painted cement walls, ornamental plaster ceiling and cast cement balustrade between the arches.

The arches on either side of the main entrance arch on Van Ness avenue have large cast bronze frames arranged with plate glass divisions, also hooks on the rear of bronze mullions, so that metal frames with the printed news items may be bulletined easily and quickly. Behind the balustrade and between the jambs of the loggia arches are huge reflectors for flood lighting the loggia with various colors. The architect of the building is Leonard F. Starks of Sacramento.

* * * *

Brass Mail Boxes

An important new use for brass was introduced at Atlantic City recently when the Post Office Department placed the first brass mail boxes ever used in this country at all mail collection points along the boardwalk. This step is the result of an inquiry instituted about a year ago by the Post Office Department at Washington with a view to reducing the heavy maintenance expense due to the rusting of the steel boxes, the average life of which is about three years.

Consideration has been given to the fact that long familiarity with the dark green paint used on the steel boxes might result in confusion on the part of the public if the brass is left unpainted, but inasmuch as the painting of the steel boxes is in itself a costly item which will be obviated with the brass boxes, it is possible that the post office authorities will eliminate painting.

Atlantic City was selected for the first use of the brass boxes because the sea air is particularly severe on the steel, it being necessary in some cases to replace boxes along the boardwalk in as short a time as three months. Brass boxes will shortly be placed in use in New York and other cities where conditions are favorable for speedy determination of the theory that the brass box will, by outlasting several of the steel boxes, and requiring no paint or other protection, result in marked economy for the department.

HOUSE OF MISS ANNA HEAD, BERKELEY
WALTER H. RATCLIFF, ARCHITECT

CIRCULAR SEAT, HOUSE OF MISS ANNA HEAD, BERKELEY
Walter H. Ratcliff, Architect

Distinctive California Gardens

A SPIRIT of distinct freedom from conventionality characterizes the garden views of the Anna Head Estate in Berkeley, W. H. Ratcliffe, architect, shown in the accompanying pages. Miss Head has recently sold this place, and some changes are being made to the property, but they will in no ways mar the beauty of this lovely small garden.

Writing under the caption, "The Distinctive California Garden," Mr. Allison M. Woodman says in a recent number of California Southland:

"What constitutes the California garden, as distinguished from the Eastern type of garden? There is a distinct charm about the old New England garden, full of trim little paths laid out in regular fashion, seats, trellises, arches, and arbors in set places, garden plots filled with old-fashioned, sweet-scented flowers, which is not difficult to feel. Likewise is felt the beauty of the formal garden so prevalent in the East, with the garden set out in regular fashion, and possessing fountains, pools, pergolas, sun-dials, moss-filled stepping-stone or brick walks—the while appearing to be but an extension of the house.

"It is freedom from conventionality, rather than freedom from restraint, that characterizes true Californians. It is this spirit which is reflected in California gardens. In the extreme East the spirit which prevails is that of you must do this and you mustn't do that; observe all of the proprieties; do not deviate an inch from the accepted line of traditional conduct. Here in the West we are tempted to go to the other extreme—to break entirely away from established precedent and custom. But there is an obvious danger in this attitude, which must be guarded against in matters of gardening.

GARDEN VIEW, HOUSE OF MISS ANNA HEAD, BERKELEY
WALTER H. RATCLIFF, ARCHITECT

ROSE GARDEN, HOUSE OF MISS ANNA HEAD, BERKELEY
Walter H. Ratcliff, Architect

"In California, I believe, the trend is towards a distinct informality in most of our plantings. And yet, even in informality there must be some semblance of unity of purpose and conception; in fact, it is really much more difficult to form an informal than a formal setting. Sometimes the wisest procedure seems to be to strike a happy medium between the two—to include the best features of the formal garden, giving them an informal, intimate setting. In other words, we remove the austerity of too formal a treatment by adding a touch here and there of informality.

"All this pertains to gardens, adjuncts to residences informal in character. Gardens immediately adjoining residences of classic design naturally would conform in their lines and general scale to those of the residences, or else the classic beauty of the latter would be vitiated or lost. A gradual transition could then be effected from the formal to the more informal parts of the grounds. It is this lack of feeling for the proper relation of house and garden that, in many instances, has practically destroyed any sense of harmony between the two.

"The small size of an estate does not necessarily prohibit making it as artistic, or more so, than one of wider expanse. The cameo, though diminutive, may contain as much detail as does the large painting. Given a bare piece of ground of any dimensions, it is possible by clever artifices of plantings and placement of walks and vistas so to deceive the eye, as to make the estate appear several times larger than it really is.

"The garden at all times should be considered but an extension of the house. This point is frequently neglected; we think of the garden as being a distinct entity, instead of being directly related to the house. And yet this is a grievous mistake to make. The house should be so designed as to make it a comparatively easy matter to lay out the grounds."

Extremes of Architecture

The most laboriously wrought stone carving in the world, the Temple of Chenna Kesava, at Belur, India, was built in the 12th century to celebrate the conversion to Vishunism of a Jain ruler. Fergusson says of this particular temple: "The amount of labor which each particular facet of this porch displays is such as never was bestowed on any surface of equal extent in any building in the world."

Another masterpiece of sculptured stone, at Hullabid, India, 10 miles from Belur, is greatly ruined now, and many of its gems have been removed to the museum at Bangalore. When intact it was the finest specimen of Indian art in existence. This column is one of the most marvelous exhibitions of human labor to be found even in the patient east—far surpasses anything in Gothic art. The effects are said to be just what the Medieval architects were aiming at, but which they never attained so perfectly as was done at Hullabid. Fergusson further says, placing the Hullabid Temple and the Parthenon in Athens as the two extremes of architecture: "It would be possible to arrange all the buildings of the world between these two extremes, as they tended toward the severe intellectual purity of the one or the playful exuberant fancy of the other."

* * * *

Building Industry's Greatest Obstacle to Progress

At the present time the greatest obstacle to progress, strange as it may seem, is the indifference of employers. Perhaps indifference is not the word. I have met no employer who did not endorse the general proposition that the only way in which the ranks of skilled labor can be recruited is through apprenticeship training. They applaud the work of the Commission and contribute to its financial support, but when they are appealed to take on one or two apprentices and make themselves responsible for their training, they find some reason for refusing or postponing action. "We have no opening just at present. Call us up in six weeks or two months. We can't afford to lower the efficiency of our gangs by putting beginners on the scaffolding who will take up the time of skilled men." Here lies the only difficulty we have met. And it is obviously a serious one.—Burt L. Fenner.

* * * *

California Bungalows for Australians

An "Ideal Homes" exhibition in Melbourne has aroused great interest in American type houses and in mechanical house-keeping equipment. The United States furnished most of the ideas for the homes. House plans submitted were principally after the style of California bungalows, and the labor-saving devices entered in the contest were in the main, American.

The domestic help problem in Australia is a serious one, and the movement toward smaller and more compact homes and furnished flats and the use of labor-saving devices in the home is distinctly noticeable. A natural result of these new ideas in home making should be an increase in the Australian market for these products.

The Prime Minister of New Zealand has recently stated that a loan fund approximating $5,000,000 is likely to be raised to furnish aid to persons desiring to build homes.

Garage Roofs for Parking

NO ONE can foretell the amount of automobile storage space which will be required in the congested sections of our cities. Therefore, all garage buildings should be erected with provision for increasing their capacity. Where ground is expensive, and it is likely to be if garages are placed where they are needed, the most economical way to provide for expansion is to design the foundations heavy enough for additional floors. In any garage roofs should be constructed so that automobiles may be parked upon them if only to care for an emergency.

There seems to be, at least, three good methods for construction of garage roofs that have come to our attention. They follow:

The roof of the Scruggs, Vandervoort & Barney Department Store garage in St. Louis was built of tee-beam construction with 2½" slab. Temperature bars were put in the concrete beams and reinforcing mesh in the concrete slab which was then treated with three coats of waterproofing, coated with moist Neat Cement, and then a concrete top of 1" mortar composed of one part cement and one part sand. This roof has been found to be absolutely water-tight.

One of the foremost construction companies in the East suggested the use of a 2½" or 3" concrete slab over the usual five-ply water-proofing felt roof covering laid on with hot tar. The slab should be constructed in sections not exceeding 5' in each direction and separated from each other and from the parapet wall by quarter inch joints filled with a suitable expansion joint (Carey "Elastite," or equal, quarter inch thick). Before applying the concrete slab finish, the surface of the felt should be covered with a heavy layer of hot tar. Concrete should be poured against "Elastite" instead of inserting "Elastite" afterward.

A suggestion by a structural engineer who has had a great deal of experience with garages, follows: After the roof slabs are put in they are covered with a three-ply membrane water-proofing. Over this is placed 2" of cinder concrete and the roof is then finished with 1" of concrete with integral water-proofing. Two-inch expansion joints should be provided around the parapet wall and along lines dividing the roof into sections not to exceed 100'x100'. These expansion joints should be filled with plastic slate.

* * * *

The Severance Gardens, Pasadena

The Severance Gardens in Pasadena, six interesting views of which are shown in this issue, have attracted world-wide attention because of their unusual charm and beauty. Both the house and grounds were designed by Messrs. Johnson, Kaufmann and Coate, and the jury of Los Angeles architects thought so well of their work that the firm was awarded a medal of distinction. Mr. Coate in a letter to the Editor writes that it is "unquestionably the best thing of the kind that we have done, and although the pavilion would be much better had it been furnished, and had the vaulted ceiling been decorated, nevertheless it is a piece of work rather unusual in quality for this part of the country."

All of the stone is of Italian Travertine and the columns of the pavilion are of marble, as is the floor. The large wrought iron grille in the pavilion and the railing at the end of the pool were executed by Samuel Yellin, of Philadelphia, whose work is well known to members of the profession.

FOUNTAIN DETAIL, GARDEN OF MR. J. L. SEVERANCE, PASADENA
JOHNSON, KAUFMANN & COATE, ARCHITECTS

GARDEN FOR MR. J. L. SEVERANCE, PASADENA
JOHNSON, KAUFMANN & COATE, ARCHITECTS

GARDEN PAVILION FOR MR. J. L. SEVERANCE, PASADENA
JOHNSON, KAUFMANN & COATE, ARCHITECTS

GARDEN PAVILION FOR MR. J. L. SEVERANCE, PASADENA.
JOHNSON, KAUFMANN & COATE, ARCHITECTS

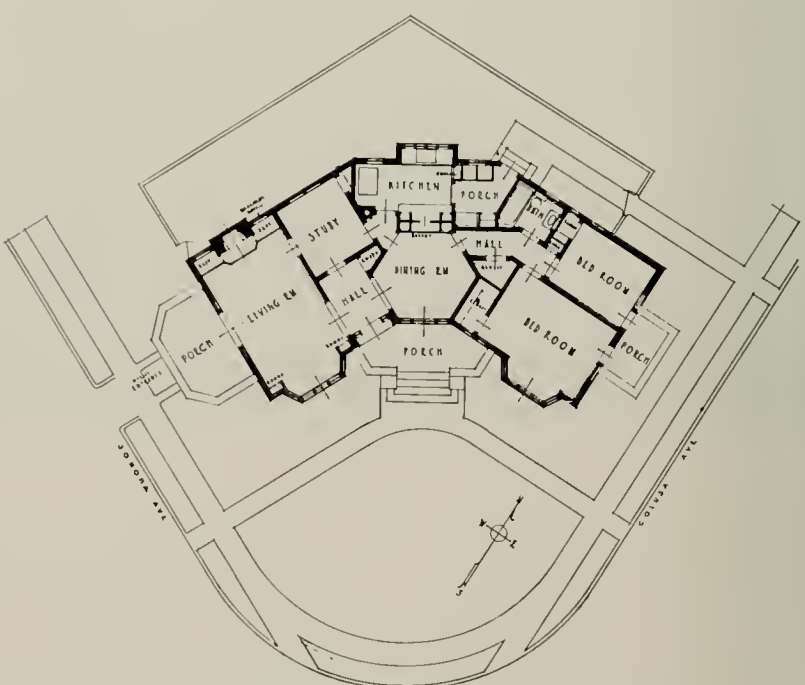
DETAIL OF PAVILION FOR MR. J. L. SEVERANCE, PASADENA
JOHNSON, KAUFMANN & COATE, ARCHITECTS

SERVICE BUILDING FOR MR. J. L. SEVERANCE, PASADENA
JOHNSON, KAUFMANN & COATE, ARCHITECTS

STANFORD UNIVERSITY, PALO ALTO, CAL.
BAKEWELL & BROWN, ARCHITECTS

STANFORD UNIVERSITY, PALO ALTO, CAL.
BAKEWELL & BROWN, ARCHITECTS

BUNGALOW AT NORTHBRAE, BERKELEY
Lloyd Rally, Architect



PLAN, BUNGALOW AT NORTHBRAE, BERKELEY
Lloyd Rally, Architect

PUBLIC LIBRARY

HOUSE FOR MR. JAMES F. McGUINESS, REDWOOD CITY
Cardboard Model by Lewis Roth Studios

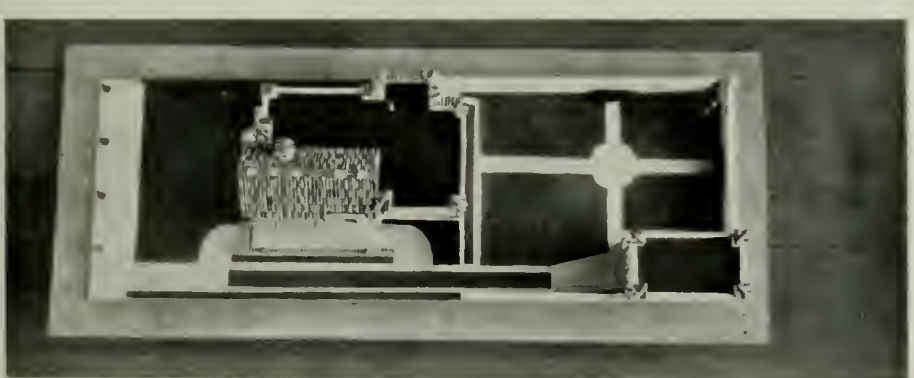
Models in Cardboard

By JOCKEMO CASASSA

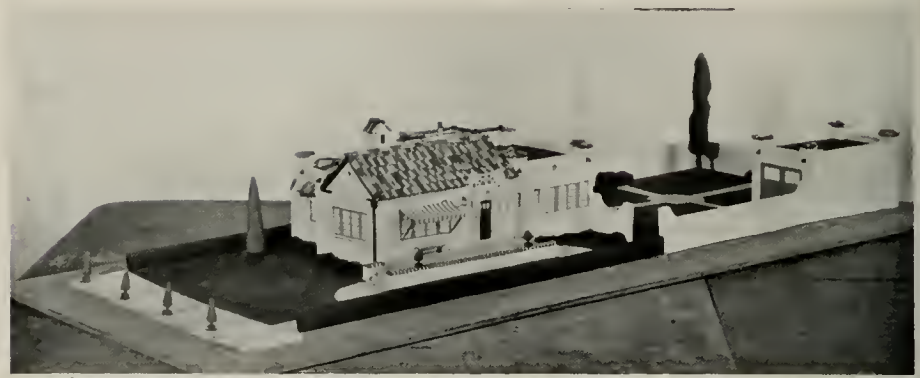
ARCHITECTURAL models of cardboard are extensively used in the East, and the Lewis Rothè Studios, San Francisco, are now prepared to introduce them to the West. Architects generally recognize the advantages to be gained through the use of a model, for it eliminates any difficulty that may, and often does, arise between architect and client, due to the client's inability to understand drawings and plans. A model gives the client an exact reproduction of his proposed building in miniature, placed to the best possible advantage on his lot, with landscape, gardens and other contemplated improvements harmonizing. The cardboard model permits exact reproduction of the color scheme. Interiors can also be constructed to exact scale in clean cut detail. Thus the client may see his building in any perspective, from all elevations, and any changes necessary can be made in the plans before construction of the actual building is begun.

The relation of the building to the community or surrounding landscape can be determined by composite photography; that is, a photograph of the model fitted into a photograph of the site it is to occupy.

Owing to difficulties of casting, clean-cut details are impossible to reproduce in a plaster model; at best the results are crude, presenting



AIRPLANE VIEW, JAS. F. McGUINESS HOUSE, REDWOOD CITY
Jas. F. McGuiness, Architect

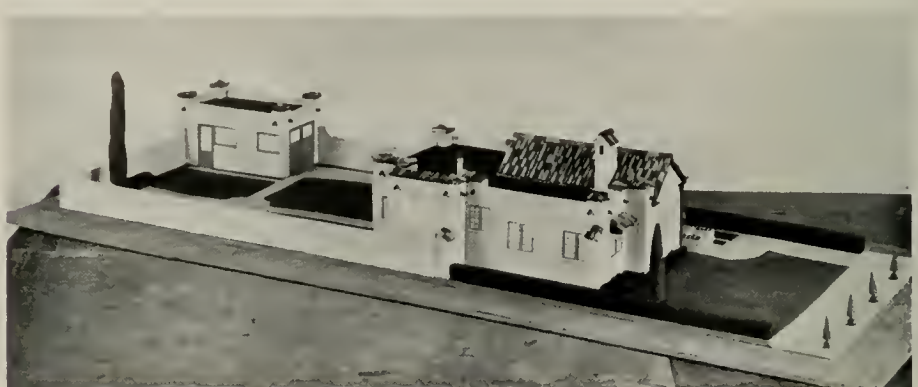


HOUSE FOR MR. JAMES F. McGUINESS, REDWOOD CITY
Cardboard Model by Lewis Roth Studios

only a general effect of the completed building. A plaster model is expensive and takes considerable time to make, because of time consumed in casting, drying and the difficulties of working in clay or plasticene.

Cardboard models can be made in much less time; a house similar to the photograph with this article can be completed in about five days for approximately the price of a perspective drawing. A cardboard model is constructed from the architect's working drawings, correct in every detail and to careful scale. It is light in weight, but sturdily built and convenient to display. Working with paper and cardboard makes it possible to construct models at various costs. When only a general effect is desired, minor details can be painted in; this can be done in a very short time, therefore at a small cost. Otherwise each bit of detail is built up in relief to scale, requiring more time and care and a greater expenditure.

The interior as well as the exterior of the building may be embodied in the model, revealed by the removal of roof or walls. In the case of elaborate interiors, it is wise to make the interior separate or the entire model to a larger scale than would otherwise be necessary.



HOUSE FOR MR. JAMES F. McGUINESS, REDWOOD CITY
Cardboard Model by Lewis Roth Studios

Relationship of the Architect to the Millman*

By ELLIS F. LAWRENCE, F. A. I. A.

THE most promising thing on the horizon just now is the co-operative movement between individuals and between groups—seeking to solve common problems, such as the elimination of needless waste and efficiency and justice in production. Democracy itself is on trial today. Without the co-operative spirit, democracy will fail, for democracy is co-operation, in the last analysis.

You of the Western Planing Mill and Woodworking Association are to be congratulated, for your co-operative movement is bearing fruit already. Only a few years ago in this locality the millman was the most cursed member of the building industry. Had I then sent out, as I did last week, a request to architects to give me their criticism of the planing mill, I should have been deluged with complaints. Today, out of twenty-seven such letters to architects, I have received but four answers and these, as you will see when I read them, are gentle, mild and quite harmless.

In conversation with my fellow architects, the criticisms formerly prevalent are absent. The other day I met a prominent contractor of this city—one with whom my organization has put through many projects. I asked him what I could constructively bring out in this talk. A few years ago his chief complaints on the job were directed against the planing mills—for inaccuracies, for delays and broken promises, for workmanship—even for lack of honesty of purpose. He told me he had no complaints whatever. To be sure, he deals now with one mill and is done with competition, both between himself and his client, and between himself and his planing mill—a mill that evidently believes that service and right prices bring steady business.

I cite these, not to indicate that I believe the service of the planing mills cannot be improved further, or that they have solved all their troubles, but because, in all fairness, your association deserves great credit for your achievements in your co-operative undertaking. I only wish that, during these last few years, the architects in this locality had been able to do as much in their field, upon which you all in the building industry depend largely for your own success or failure. With inferior or corrupt architectural service, you are seriously handicapped. With skilled, honest sevice, your business is facilitated.

Some one has said that "A pessimist is one who **thinks** everything is wrong with this world, while an optimist is one who **knows** everything is wrong, but doesn't give a d——." Although some parts of the picture I hope to be able to paint are dark, I should dislike to leave the impression with you of general pessimism, for the pessimist has no place in the present order of things, where courage and faith in mankind in general, and real democracy in particular, are vitally needed as never before.

As to optimism—an old story comes to my mind. "Two friends, an optimist and a pessimist, greeted each other one morning in the elevator of a skyscraper. The pessimist left the elevator at the ninth story, entered his office, opened up the window and stood looking out on the city below, seeing neither the sunlight nor any other redeeming feature. The optimist left the elevator at the twentieth story, entered his office, directly over that of the pessimist—opened the window, gloried in the sunshine and the life pulsing in from the city below—leaned forward and

* Abstract of a paper read at the annual convention of the Western Planing Mill and Woodworking Association, Portland, Ore., and revised for this magazine by the author.

fell out. As he neared the window on the ninth floor, he caught a glimpse of his pessimist friend and shouted, "Hello, Charles, a great day and I'm all right so far."

Now it seems to me that there are too many such optimists in the world—the one type is generally pretty successfully looking out for his own interests, making hay while the sun shines and not giving a d—— as to how he deals with his fellows, what price he pays or exacts. The world, too, often seems to brand such, when they succeed in amassing considerable of this world's good, as "successful men." The other type, blind to conditions, keep shouting to all they meet, "Everything is fine and I'm all right—so far." I have little use for either type.

I face you today, knowing that none of you belong to these three divisions of mankind. You are not pessimists, for if you were you would sulk and not play in such a movement as you have started in this organization. You are not the optimist of the "don't give a d— type," else you would not have any interest in the architect and the other elements in your industry. Neither are you the optimist who shouts "all right so far," without giving proper heed to the future and the chaos that indifference to fact inevitably leads to.

On the contrary, you evidence confidence in your fellows, recognition of your failures and your faults, as well as pride in your achievements—belief that by co-operation much constructive work leading to solutions of your troubles, and incidentally the troubles besetting the building industry—may be undertaken wisely and well.

For these reasons I am honored to be invited to speak on this occasion on "The Relationship of the Architect to the Millman." I should fail to reciprocate if I were anything but frank and outspoken. I wish more architects could attend and hear in person Mr. Cowdin's statements of our own limitations and faults, and I trust, our virtues.

As a background to what I have to say, I am, with your permission, going to attempt to sketch certain phases of the general conditions under which we are laboring these days, laboring to put our own house in order and, by so doing, to carry better service to the public, of which, in the last analysis, we are but servants.

Only a full appreciation of these general conditions can justify the expenditure of so much gray matter, and time spent in attempting to solve even the pettiest details of our respective businesses. Only with such an appreciation does the doing of the little tasks, step by step, as must be done if ultimate chaos is not to reign, seems worth while.

Only with such an appreciation comes a full realization of the seriousness of the situation and the full recognition of the challenge it makes to all thinking men and women—for service.

* * * *

You know the story of Russia—how Germany is going—the innovations in government in the Balkans—the steadily increasing tendency in England to a dominion by the Labor Party, with its accompanying nationalization of the basic industries. Groups of labor in England are banded together to build great housing projects on government loans, under Guild Socialism. In Copenhagen, a recent article tells us, private contractors are no longer operating—all building being done by the nation itself or by the co-operatives with government money. These co-operatives are of course quite as different from our co-operative undertakings here, as our Guild movement here in Oregon is different from Guild Socialism.

Secretary Hoover, not long ago, gave out a message to the building

industry, the gist of which was, "If you do not want governmental interference, get busy and caulk up and repair the old overloaded ship, to make it function properly."

Whether you read the Atlantic Monthly, the Living Age, the Manchester Guardian, the Saturday Evening Post, Nation's Business, or the more liberal or radical New Republic or The Nation—the same malady is recognized and discussed freely and from many angles. The world is seething with an assault on capitalism. If I were attempting to boil down the situation as it applies directly to our industry, I should say that the competitive method was under fire and we, in groups like this of yours, must determine whether competition is to continue a curse, and as such, contribute to possible disaster, or whether it is to become a great stabilizer and stimulant of incentive.

Dr. Devine, the great social worker, addressed not long ago the City Club of Portland on the Three R's. As I remember them, they were Radicalism, Reaction, Revolution—the three great menaces. It is interesting in passing, that the doctor believed the greatest menace was Reaction.

Ex-President Wilson, in the August Atlantic Monthly, writes under the caption, "The Road Away from Revolution." I quote a few passages:

"In these doubtful and anxious days, when all the world is at unrest and, look which way you will, the road ahead seems darkened by shadows which portend dangers of many kinds, it is only common prudence that we should look about us and attempt to assess the causes of distress and the most likely means of removing them."

"It is to be noted as a leading fact of our time that it was against 'capitalism' that the Russian leaders directed their attack."

"There are thoughtful and well-informed men all over the world who believe, with much apparently sound reason, that the abstract thing, the system, which we call capitalism, is indispensable to the industrial support and development of modern civilization."

"And if these offenses against high morality and true citizenship have been frequently observable, are we to say that the blame for the present discontent and turbulence is wholly on the side of those who are in revolt, against them? Ought we not, rather, to seek a way to remove such offenses and make life itself clean for those who will share honorably and cleanly in it?"

"The world has been made safe for democracy."

"But democracy has not yet made the world safe against irrational revolution. That supreme task, which is nothing less than the salvation of civilization, now faces democracy, insistent, imperative. There is no escaping it, unless everything we have built up is presently to fall in ruin about us; and the United States as the greatest of democracies, must undertake it."

"The road that leads away from revolution is clearly marked, for it is defined by the nature of men and of organized society. It therefore behooves us to study very carefully and very candidly the exact nature of the task and the means of its accomplishment."

As a great publicist puts it, "It's a race between education and revolution." Your movement is educational in the real sense of the word. There can be no doubt that it is timely and wise and vitally necessary when one weighs the facts. I have dwelt at length on these matters in the hope of strengthening the appeal to you, for widening out your field of co-operative endeavor, so that it may touch all the branches of this great industry of ours.

* * * *

The first letter from the architects I shall read, touches on the co-operative idea in an interesting manner:

"I had just read part of a speech by Sam A. Lewisohn, Vice-President and Treasurer of Miami Copper Co., when your letter came asking for suggestions for your paper at the coming Millman's Convention. You may have read it, but I am going to quote the following:

"Now, if we stop for a moment to analyze what are the main things we are

striving for in our industrial system—a system which is, of course, if anything, more important to us than our political system, I think we can safely say there are two main things, the greatest possible production, and the maximum development that is possible for each human being involved in that system, consonant with a reasonable effectiveness from a productive point of view. They are both important. We want production, but we don't want production that will cripple the human beings in the system morally, emotionally or physically. We want the self-development of the human beings in the system, but any scheme for developing them must be shaped, of course, to assist and not to retard them."

It seems to me that this applies to our planing mills quite as much as to any other industry.

I think our mills are doing better work than they did a few years ago, and I think they are trying harder. None of the mills have refused to bid on high-grade work, as one of our best mills did a few years ago, on the plea that they couldn't make any money out of specially designed work. This was because they had plenty of orders for stock stuff that could be pushed through the machines by unskilled workers, and that it was next to impossible to obtain cabinet makets. You know the story—the need for speed and quantity has smothered quality, and the best that we can get today is not good enough, though it is better than we were getting a short time ago.

I don't believe I can give you anything that has not been said many times. All we can do is to encourage as much as possible the pride in good workmanship. The millmen should get this incentive across to the men, and the men should be treated as human beings, even if they do run machines.

* * * *

The second letter is as follows:

The chief causes of trouble I have experienced with planing mills are these:

One—Promises of delivery are not always honestly made and too often jobs are unreasonably delayed.

Two—Trouble with doors. Outside doors and garage doors should not be glued, but doweled and nailed. Some mills persist in sending out glued doors for outside work.

Three—French door glass is too often set on a strain, causing a large number of broken lights months after the completion of the job.

Four—Glass in sash should be back puttied. I have had considerable trouble with driving rains going through puttied glass.

Five—I think it would be better if the double rabbeted door jamb were eliminated and a plain jamb used with a square top, then it can be sanded and the stop can be adjusted to the door. Most double-rabbeted door jambs are not straight and need to have the inner edges cleaned by hand.

Six—Mills should standardize on mouldings and co-operate with the architects in getting good lines.

Seven—More care should be used in matching woods when same are glued together; recently I had a glued up mahogany hand rail come on the job with part of it almost white and part black.

Briefly these are a few of the things that I have noticed in the deficiencies of the planing mills.

From my own experience, I feel that item number one in this letter, should be stressed. I have had few jobs during the last eight or ten years—where what seemed an unnecessary delay, did not come from failure to receive millwork when needed. I grant that the indictment must also rest on the shoulders of contractors who are inclined to do shopping, or who fail to place their orders in time—and upon architects, too, who fail to deliver complete plans and F. S. details on time. Great financial loss accrues from this on both contractors and owners. Just now we have a case in our office to be adjusted, where an apartment house was delayed four months in completion. The owner lost his loan, and he thinks—four months of rent. The contractor will undoubtedly be penalized before a settlement can be made.

Recognizing fully that all lines in the industry have recently been strained to the breaking point—still, ways and means should be found to overcome this fault in the system. At least a definite date of delivery

should be given by the mills, based on delivery of details and information. This would at least fix responsibility.

Another architect dwells on the failure of the mills to properly match their woods in each unit of work, as to color and as to grain.

A well known manager of estates, who architects on the side, writes: "I have no suggestions to make in this matter," indicating that he, too, must have a mill behind him that delivers service.

Time was when inaccuracies in measurements in mill work caused us much trouble also when liberties were taken with contours of mouldings, but of late we have had little trouble along these lines.

We still believe that failure to deliver kiln dried stock is too prevalent. There are shyster mills, as there are shyster architects. Its a pity that we cannot at least work out some system in which the legitimate operators are officially recognized. Certainly a mill taking a contract to deliver kiln dried stock is getting money on false pretenses if it does not do so, and it is doing legitimate business and the reputation of the architect involved much harm. Dairies, restaurants, schools are rated. Why not planing mills?

Lack of standards in presentation and in specifications are serious handicaps, though easily overcome if the right basis of co-operation between architects and millmen is established. However, there is no excuse for deliberate liberties being taken with standards. I regret that we still find some mills substituting 16 oz. glass for best 21 oz. AA selected as specified, explaining perhaps why competitive figures so varied. The lower bidder does not always deserve the job under existing methods. How much easier and fairer would the competitive system be if business morality was such that the low bidder always deserved and got the job.

We recognize, as architects, the value to your group of "stock" business, though we dislike to see it dominate or crush out the special work. In much work we would use "stock" if the mouldings and designs were to our liking, and we were furnished with full information. Unfortunately—what is "stock" in one mill, may not be "stock" in another, and when we design we do not know what mill will get the contract.

* * * *

The architect is expected to know everything about everything in the building game. He does not because he cannot. Why not give us the benefit of your expert knowledge in a booklet on Technical Information on Millwork? Tell us about methods, such as:

How wide a moulding can be solid stuck on a door stile?
How wide a panel mould can be used safely without a spline?
Is it safe to veneer a door with one kind of wood on one side, and another kind on the other side?
When should 3-ply and when should 5-ply panels be used?
How thick a veneer should be used on door stiles?
What are the limitations on machine carving?
How large a moulding is it practical to stick in one piece?
How large a door is it advisable to make ¾" thick?
How large a door is it advisable to make 1" thick?
How large a door is it advisable to make 1⅜" thick?
How large a door is it advisable to make 1¾" thick?
A list of don'ts might save us trouble, such as:
Don't use veneered work where exposed to rain or moisture.
Don't expect a first-class enameled job on flat grained fir, etc., etc.
Explain the mill list and the Central Listing Bureau, and it would be excellent to define minima standards of plans, specifications and full size details from your point of view.

Such a document approved by your organization and accepted by

our organization would serve as an excellent basis of practice between millmen and architects.

Get the architects to go through your best mills in groups. The broadminded will relish the opportunity. Look out for the ones who resent such an invitation. They know it all anyway, and can't be told.

In general in the Northwest, building standards are lower than in the East. The public should be educated. More hardwood should be used. Why not furnish the architect with information concerning local stocks of hardwood, relative prices, samples and other technical information?

No, you in the mill game cannot solve all your troubles without helping all the rest of us in the game to solve ours. Needed reforms cannot all be made without the strength of a united front, and until "functional consciousness" is inculcated in the entire game—a consciousness that recognizes the rights and functions of each group. It takes a stabilized Building Industry—one in which the public has full confidence—before either millman or architect will come to his own.

And, speaking of "functional consciousness"—some mills feel it necessary to make plans. Granted, the architects would get but little of that class of work, anyway—it still is true that by so doing, the public is led to belittle the architect's function. To such mills, may I suggest the Architects Small House Service Bureau. As good plans and specifications and, if you please, Quantity Surveys as can be made, are furnished through this bureau at from $15 to $25 per house. The bureau is endorsed by the American Institute of Architects and needs your support. Its success will strengthen the legitimate architect and his important functions. It deserves your support morally and financially. It is an altruistic, non-profit making organization, and through its several bureaus has already issued plan books of real value to the localities they are designed for.

The architect is the professional element in the industry. The public is coming to have more confidence in the architect as he measures up by training and service. Through him much can be done in educating the public to accepting right practices. Help us architects to enforce our license laws. Would that the mills were strong enough to refuse to figure from incomplete or tricky plans! Would that abuses would always, as they should be, be reported to license boards, or to such associations of the industry as are organized in New York, Boston, Philadelphia, Seattle, Portland and other localities, in the Congress movement about which I want to speak in closing.

To summarize:

The architect, being the professional element in the industry and as such, often an adjucator—an interpreter of contractural relations—should be of unquestioned integrity. He must be fair to both the owner and the contractor or other party to the contract. He cannot maintain a high standard of practice without the full backing of the industry as a whole. The architect's training is especially in design and construction theory. Both branches are man size jobs in themselves. Technical information from such fact finding investigating bodies as yours would be of great assistance in standardizing methods of presentation, specifications and practices of competitive bids. In turn, the architect and the industry in general should expect from the mills real service and honest business practices.

We are moving on to these ends. Never before has there been finer

minds or more unselfishness applied to the problems. With a mutual basis of respect which real co-operation inculcates, the building industry should come to its own.

My purpose in spending so much time on my preamble was principally to give a background for my earnest plea for your support of the national movement for co-operation in the building industry, a movement that appears to me to be a real antidote against unrest, and even worse conditions that might materialize. The National Congress of Building and Construction Industry is led by Mr. Robert Kohn, the New York architect. It functions through local congresses. The American Construction Council is led by Mr. Franklin Roosevelt. It functions through representatives from national organizations. They are working together, although we here in Oregon believe that the Congress idea is correct and sound.

The Oregon Association of Building and Construction, the A. B. C. of Oregon, is made up of something over 400 members from all branches of the industry, including the public and the bankers. The governor appoints two on our directorate to represent the public. It is making a Seasonal Employment Survey. It is attempting to work out a code of ethics for the industry, similar to that accepted by the Congress in New York, where they now have a discipline committee to handle complaints and violations. It has, through its committees, influenced the constructural policies of our public schools. It has studied building codes. It has given much publicity in the matter of its ideal and purposes. It has brought us together here in Oregon in the building industry as never before, and has made us all realize that whatever action any one group may take—a direct effect on others in the industry is always felt. So the rights of others are being recognized.

The slogan of the Oregon A. B. C., which so clearly expresses the motives of your own association, is Co-operation, Stability, Prosperity, Service.

Without "Co-operation" we can have no "Stability," only the old "ups and downs"—everybody flush or broke—the greatest curse in modern business—especially bad in the building industry. The principle reason why our ranks are being depleted.

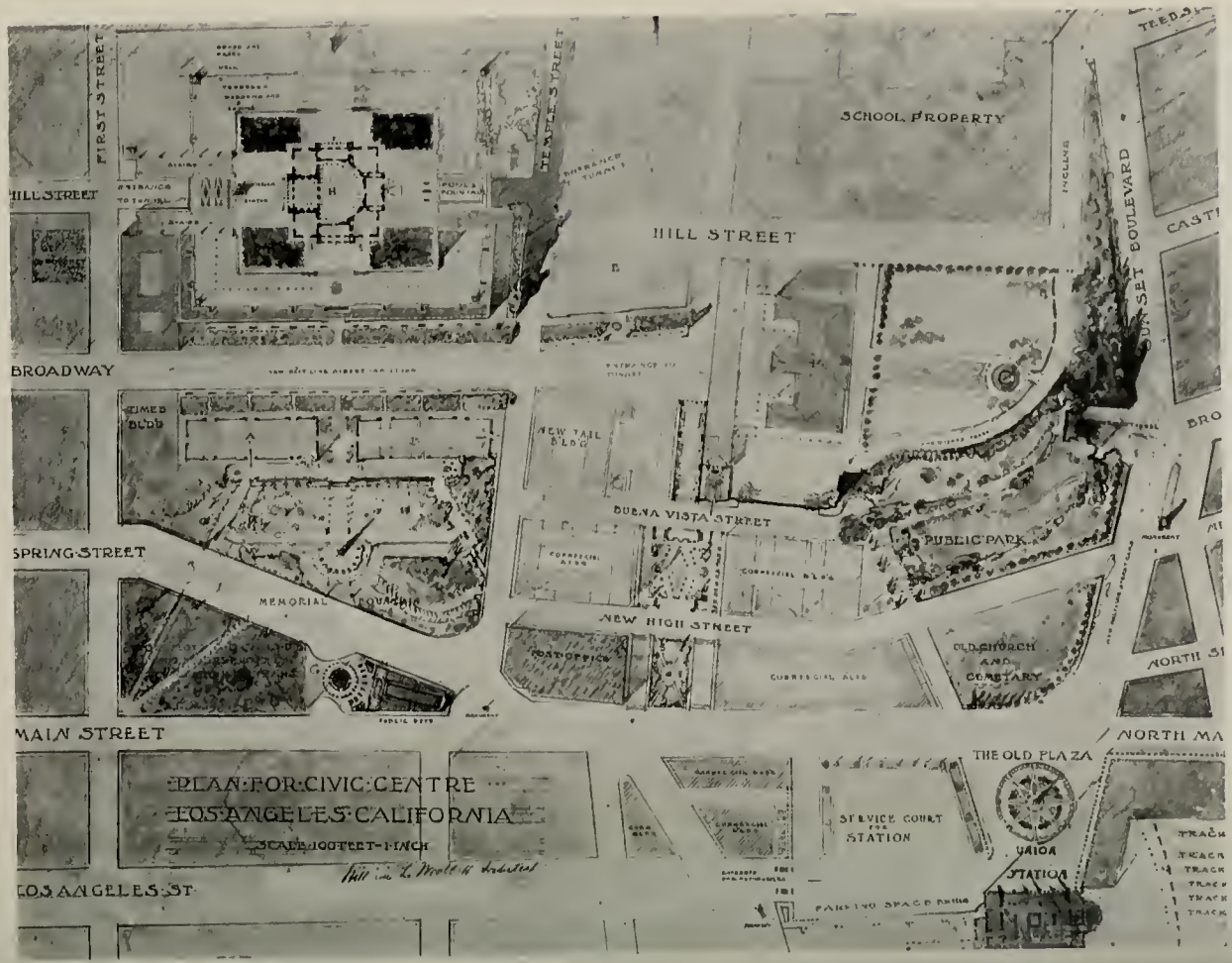
Without "Stability" no "Prosperity." Without "Prosperity" not the best of "Service, and "Life" without "Service" is empty indeed.

* * * *

Retain Only One Size of Building Brick

Through the good offices of Mr. Herbert L. Hoover and the Simplified Practice division of the U. S. Department of Commerce, the brick industry has at one stroke been enabled to sweep away an infinite variety of odd sizes of brick and establish one standard size for the seven billion building brick produced every year in the United States. This size is approximately 8 by 3¾ by 2¼ inches. The only exception now to be allowed is in the case of smooth-faced brick for special exterior use, in which a very slight variation in one dimension only is permissible.

The common brick industry established the standard size some years ago, but experienced trouble because its standard was not insisted on for public work and by many architects. With the government now definitely supporting the industry in its efforts to standardize its product, it is expected that before long all specifications will call for standard size brick.



PROPOSED PLAN FOR CIVIC CENTER, LOS ANGELES
WILLIAM LEE WOOLETT

Key to Photograph:

"H".—Municipal Building, containing Courts, Mayor's Office, Council Chamber and General Executive Offices on the axis of Hill Street; on Broadway, from 1st to Temple, offices embracing the Service and Income Departments. Entrance for all parts of this group from Broadway and Hill Street levels.

"A" and "B". Opposite the Municipal Building on Broadway, two buildings for the use of the State, opening between, on the axis of the Municipal Building with Memorial Plaza in the rear, the main features of which are on the axis of Spring Street.

"F".—Educational Building.

"G". Public Bath.

New Jail—Hall of Justice.

"K".—Hall of Records.

"E".—Fire, Traffic and Police; Departments of Public Safety, including Ambulance Service and Dispensary.

NOTE.—Buildings noted as Commercial buildings may be devoted to extensions of present needs.

FIG. 1.—PROPOSED EDUCATIONAL BUILDING OVER BROADWAY TUNNELS, ON AXIS OF BROADWAY, LOS ANGELES

More Anent the Los Angeles Civic Center

ARCHITECT William L. Woollett, whose articles and drawings in this magazine on the proposed Los Angeles Civic Center have aroused much interest and discussion, has prepared additional drawings, which are published herewith, together with some notes inadvertently omitted in the August issue:

"At the site of the proposed Civic Center the north and south traffic is at a maximum and the east and west traffic is in comparison small. To free this area entirely of east and west traffic would materially assist in opening up the general traffic lanes out of the city at the north end.

"Therefore, in order the more fully to protect and conserve the freedom of traffic, north and south, Temple street should be converted into a park. (See Fig. 2.) The steep grade of this street now causes traffic at all its intersections to be difficult, dangerous and slow. Temple would thus become a cross-town street for pedestrians only. Pedestrian traffic would be diverted from elsewhere, and would revive this street as a business and commercial thoroughfare. The stores would again be profitable in the first floor areas of the great buildings erected for offices, etc.

"The educational building which is proposed to be placed on high ground over the Broadway tunnels and on the axis of Broadway is an as yet unadvertized enterprise which should be co-ordinated with the other contemplated improvements. (See Fig. 1.)

"An imperial and practical scheme, looking forward fifty years, is demanded by the temper of our people and the genius of our civilization. Nothing less than the courageous vision of service on the part of the city fathers is necessary. An intelligent understanding of the need is frequently all that is necessary to bring about the desired results."

* * * *

The following extracts are from a letter addressed to the Editor by a Los Angeles man who questions the merit of either the Woollett

CROWNING FEATURE OF CITY HALL GROUP ON AXIS OF HILL STREET, LOS ANGELES

Tower at right of picture located on corner of First and Broadway, opposite Times Building

FIG. 2.—TEMPLE STREET, LOOKING NORTH, CONVERTED INTO A PARK
Hotel over Broadway tunnels and on the axis of Broadway to the right
City Hall facing Broadway at upper left
Central feature of the City Hall on axis of Hill Street

or Herding plans published in this magazine. The publishers might add that they hold a neutral position with reference to the proposed Civic Center, and consequently are not averse to publishing other plans of merit with a comprehensive description of same:

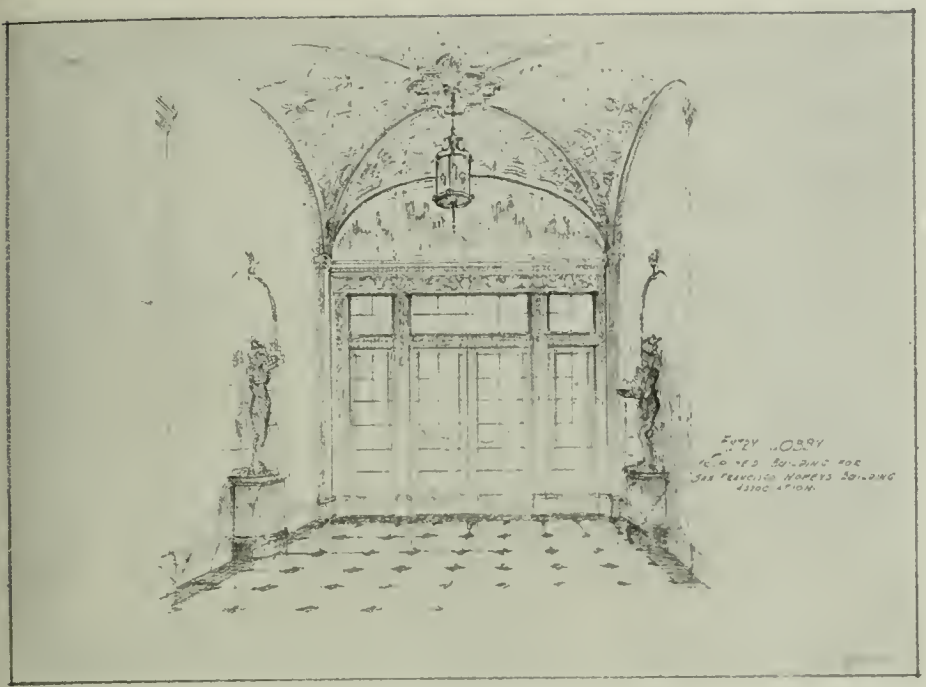
"I am very much surprised to read the articles regarding the Los Angeles Civic Center in your July and August numbers.

"These articles by Mr. Herding and Mr. Woollett are very unfair, and in publishing them I think that you have put the plans of Cook and Hall in the wrong light.

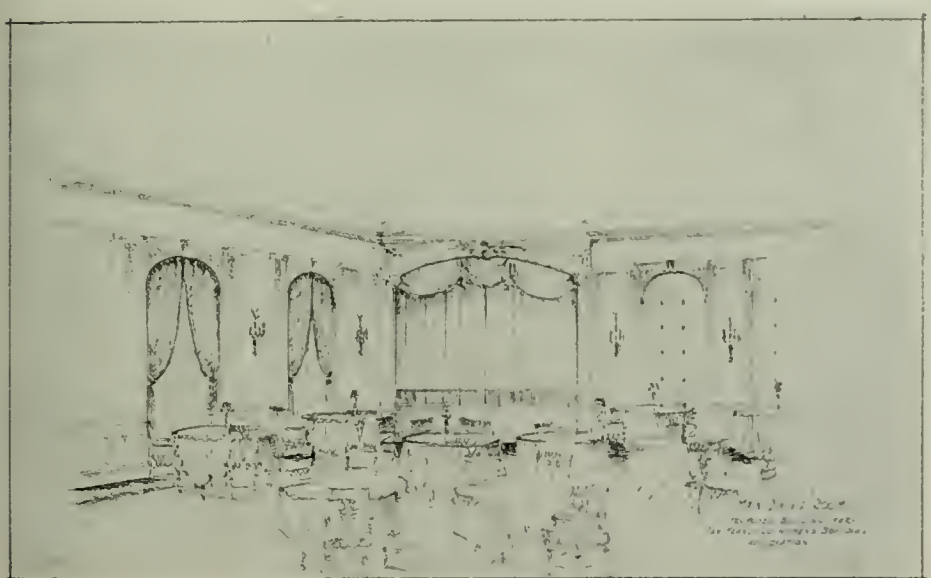
"In the first place, you have failed absolutely to grasp the situation here and to realize the problem that they had to work with.

"In allowing Mr. Herding to write his article, you picked out a man who was disgruntled because we did not care for his style of architecture, and Mr. Woolett's scheme is nothing but an Arabian Night's Dream."

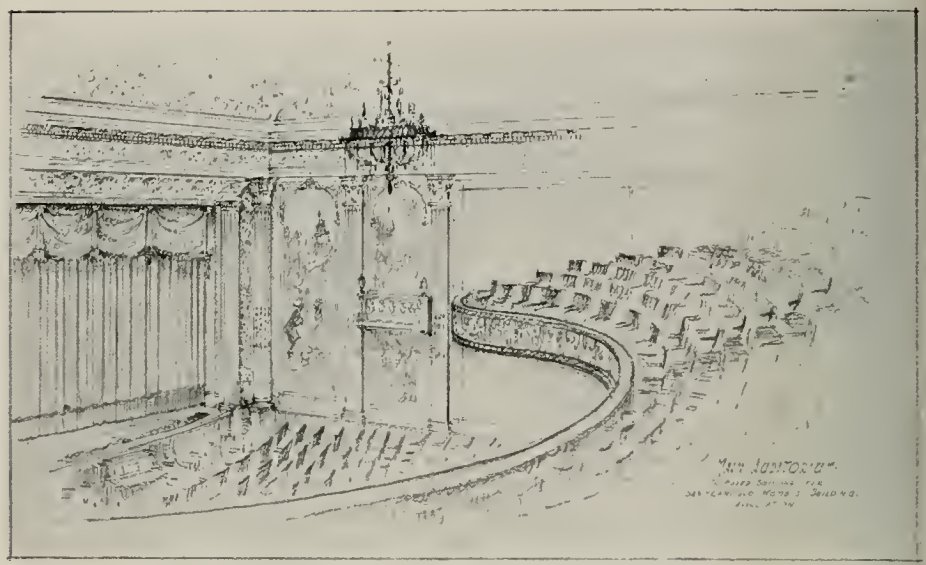
COMPETITIVE DESIGN, SAN FRANCISCO WOMEN'S CLUB BUILDING
O. R. THAYER, ARCHITECT



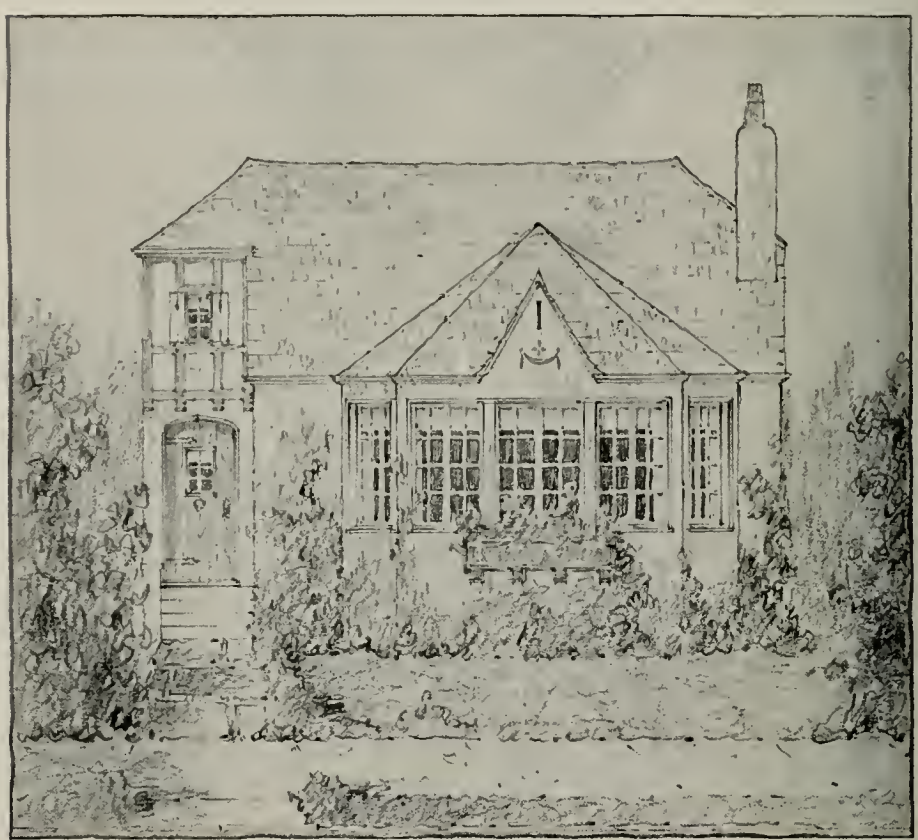
ENTRANCE LOBBY, WOMEN'S CLUB BUILDING
O. R. Thayer, Architect



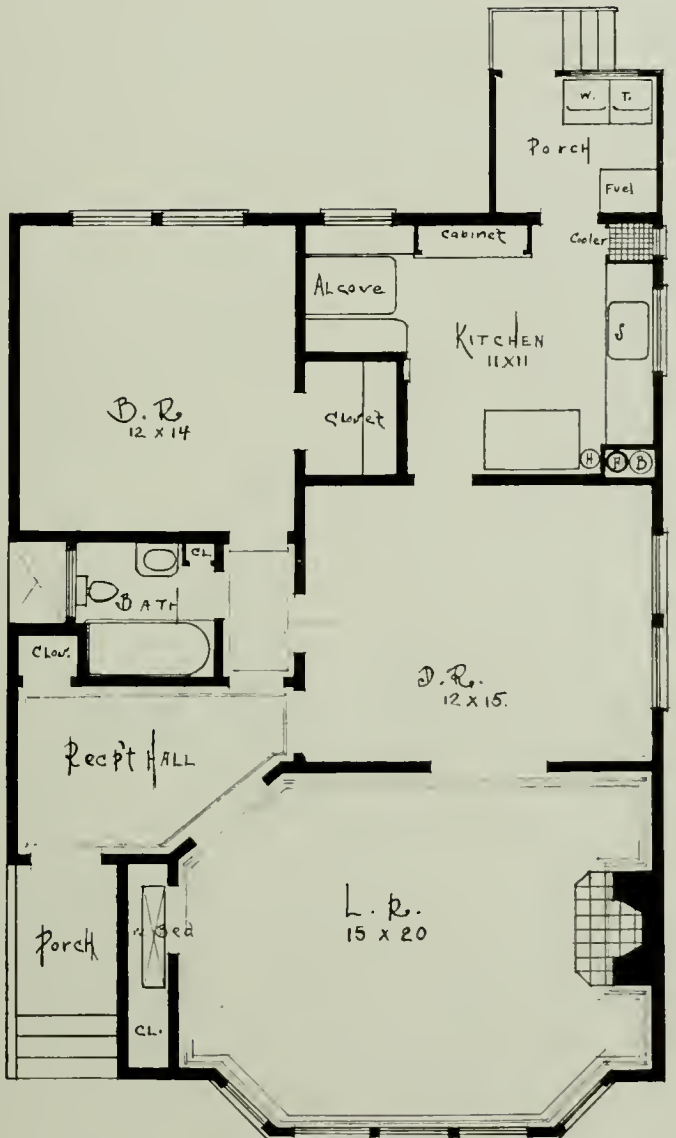
DINING ROOM, WOMEN'S CLUB BUILDING
O. R. Thayer, Architect



AUDITORIUM, WOMEN'S CLUB BUILDING
O. R. Thayer, Architect



SKETCH FOR COTTAGE, SAN FRANCISCO
O. R. Thayer, Architect



PLAN, COTTAGE IN SAN FRANCISCO
O. R. THAYER, ARCHITECT

COMPETITIVE DESIGN FOR ELKS CLUB BUILDING, SACRAMENTO
E. C. HEMMINGS & LEONARD F. STARKS, ARCHITECTS

The Inner Decoration of the Small House

By CATHERINE R. GORDON in Town Planning

"THERE can be no ruling in matters of taste," said the man who habitually kissed his cow; and that is true also concerning house decoration. But in these times when money is scarce, and time even more valuable to the busy organizer of the home, it is often helpful to think over the fundamental principles behind domestic activities, and take stock of the time and money spent upon them to see if value is really received in return.

The proportion of each room should be a first consideration; the height, length or breadth ought to exceed the others, or, by decoration, made to appear to do so. Thus a nearly square room should seem low, a long narrow room might either seem high or be very interesting if low, but height is a decided advantage to an oblong room. To get a pleasant feeling of airiness, spaciousness and good proportion, it is well to consider everything above 8 feet or thereabouts as ceiling, using a frieze at the top of the wall to continue the idea used for the ceiling, when it is advisable to get that effect. Much can be done by careful spacing of lines. In some cases a dado 4 to 6 feet high is nice, particularly in rooms much used by children. In that case it might be of washable material or wood, with a panel of blackboard cloth.

There are many beautiful ways of ornamenting walls and ceilings in houses built for the rich, but for simple folk there is much to be said in favor of avoiding plasterer's ornament, and for the use of distemper, paper or paint. It is safe to say that in small houses small, well-covering patterns are best for papers, although an excellent effect has been obtained by using a bold Jacobean pattern for ceiling and frieze, with plain cream walls.

Patterns, however, should be introduced with great care and very sparsely if the rooms are to be restful places. "Few and beautiful" should be the watch-word; a "too busy" room lacks refinement and prevents the enjoyment of the beauty which is there.

There are not many really satisfactory colors for walls; perhaps the best is a pale copper color, a pale golden yellowish brown, clean and sunny, with a white ceiling (without blue in the tint).

The light-reflecting efficiency of colors is never sufficiently remembered in this connection, especially when the rooms get little sun. Smooth surfaces are most efficient, then those slightly rough, like cartridge-paper, and least efficient those of a rough crêpe-like texture.

Light efficiency may be remembered in the following order: (1) Faint grey **cream**, (2) faint pure pale **green**, (3) light slightly brown **yellow**, (4) faint orange **pink**, (5) medium light **buff**, (6) **salmon buff**, (7) pale **grey**, (8) **light blue**, like a starling's egg, (9) **light green**—pure and pale, (10) **light red**, not deep, and with a little yellow in it, (11) **dull green**, pure and pale, (12) **medium green**, also pure and pale, (13) coffee **brown**, (14) deep **red**.

For the undersides of the joists and beams, doors, window ledges, floors and other wooden parts indoors, it is best not to vary the natural color of the wood, but if that be necessary a brown solignum, treated with ronuk (except the ceiling) or similar preparations, can be recommended.

The joists and beams may be painted in gay patterns or in modest quiet ones. A pleasing effect has been obtained when they were left plain brown and the ceiling painted a dull Persian red, with pale copper-

colored walls. Wood treated in this way improves by wear and cleaning and is pleasant to look upon and very economical in the long run.

The days of covering floors with "**anything** rather than nothing" are "days of the past, gone without regret." Rugs—large and handsome as may be, covering a floor of oak—have taken the place of made-carpets. It has been said that the modern housewife furnishes with wise omissions, and therein she shows her wisdom.

Ornaments—merely that—except one or two rare and beautiful treasures, should follow the made-carpet into the limbo prepared for such things.

Pictures—few and well-loved—should be hung carefully in good line, that a spotty effect may not happen; this will help to give an appearance of good proportion to the room. When the other necessary things are reduced to the fewest possible, if comfort be desired, they should be selected with infinite pains, each and all should be of simple design, fit for their purpose and as beautiful as good workmanship could make them.

Sunshine—air—space—beauty—leisure to enjoy—are greater value surely than the unconsidered trifles which too often fill their place.

To get as much as possible of these priceless things, it is necessary to give some careful thought to the matter. If sunshine be lacking, light-reflecting walls, gay cotton, chintzes, and pottery for general use, will do much towards making the best of things as they are.

Wise omissions and ruthless elimination of the things and designs which occupy air space and steal leisure, would add greatly to the possibility of a full and joyous life.

A walk through the dreary streets of residences in most towns would afford interesting food for thought to a student of Costing, Time, and Motion Study.

To count aspidistras and dingy lace curtains, to meditate upon the effect, the psychological effect, of such dull dinginess, and the cost in purchase, energy and time of which they are evidence, would be a useful lesson.

To see in contrast a simple home arranged in accordance with the principles indicated here, costing less—giving more—would surely convince the most conventional man alive!

* * * *

Revival of Stone Mantels

COLLECTORS and architects are ever on the alert for rare examples of Colonial mantels, and few if any escape them, for the demand keeps pace with the supply as new homes rise to take the place of those dismantled. All of the cities along the Atlantic seaboard and many smaller towns farther removed from the main roads of travel are rich in examples of Colonial and Early Republic houses, and furnish valuable materials for the collectors. Of all of the materials that entered into the construction of these old houses, marble and stone alone have withstood the ravages of time and remain as the most valuable acquisitions of the wreckers. An example in point is a mantel of black and gold marble recently taken from one of the few remaining old mansions in Rose street, New York, that was probably imported about 1800. Another in the same showroom, also of black and gold marble with iron grate of Dutch pattern, is of a later date, probably around 1820 to 1840. Nearby is a white marble mantel, probably of Italian origin, of the style commonly used in the once aristocratic brownstone mansions of New York. An excellent example of a Louis XV came from another old

mansion, golden brown, almost yellow tints still as beautiful as when it was first set up prior to the Civil War period. These are but a few of the almost priceless examples of early American interior decorative art that the so-called wreckers are preserving for posterity, for they in the years to come will be the sole models for the mantel makers who will be called upon to design Colonial mantels. Even now that the demand for mantels and fireplaces is on the increase, the designs follow the Colonial period and the trade furnishes a market of no mean proportion for the interior marble finishers and dealers.

Types of mantels, as represented in the Colonial and Early Republic periods, may be said to be confined to six styles. Of these the Georgian Colonial is of white marble overtopped by a panel of the same material extending to the ceiling. The Italian design is also a white marble production, but higher in general outline and more ornate than the Georgian Colonial, having side pilasters with capitals and usually extending to the ceiling in a sloping panel effect in which the carved decorative features are carried out. The early American design also has the side pilasters or columns, the latter detached or partly engaged, and a panel over the mantel shelf. Black and gold or gray and white marble were the popular color combinations used in the early American designs. The Medieval is similar in general outline to the Italian, only more massive and seldom used outside the more pretentious mansions, for a family coat of arms was the chief decorative feature of the sloping panel above the grate. In examples of the early Renaissance mantels found in old mansions, black marble predominates on the sides and top, a lighter marble being used immediately next to the grate. In some patterns of this style of mantel the entire piece is high, the upper part above the shelf line being a frame for a mirror. The so-called Informal mantel covered in general all fireplaces of cruder construction in which the decorative features were less dominant. Rubble stone and brick were most commonly used in their construction, and as these materials do not lend themselves well to preservation during the process of house wrecking, few examples of them remain except in isolated country places. Another type of informal mantel that bids fair to enjoy a return to popular usage is the Dutch Colonial, because of its combination of white stone or marble facing with wooden shelf and exposed brick chimney above.

Some time prior to the Revolutionary War mantelpieces began to be imported, chiefly from England and Holland, and some from France and Italy. The New York mansions and those of Philadelphia and in other cities of the Colonial states, beautiful examples of these early importations still exist. Leaf ornaments and the conventional bead, egg and dart designs were the characteristic motifs in the carvings, while the pilasters and columns varied as to fluting and carved capitals, following either the Doric or the Ionic order.

These old mantels, valuable for their associations, their beauty and as models of a past age, also demonstrate the resistance of marble and its qualities that enable it to retain its colors and lustre after years of service exposed to constant changes of temperatures and frequently of climatic changes that would cause a less durable material to crumble away. After more than a hundred years, and in some instances two hundred years, these old mantels are resurrected and rooms built around them, even entire houses, that they may continue to serve as the attractive spot of the home and keep alive a decorative scheme that should be nourished and extended in American architecture.—Stone.

Right of Architect to Damages for Use by Owner of Plans and Specifications

By LESLIE CHILDS in Architecture and Building

THE question of the right of an architect to damages, for the unauthorized use by an owner of plans and specifications drawn by him, is one upon which there appears to be little authority in the books. The point was, however, passed upon in the recent Connecticut case of Johnson & Burns, Inc., vs. Hayden, 119 Atl. 50, and, because of the paucity of authority directly on the question. this decision appears to be one of interest and value to architects in general.

In this case the defendant, the owner, entered into a contract with the plaintiff whereby the latter was to draw the plans and specifications for a house, and to supervise its erection in case the defendant decided to build. The consideration moving to the plaintiff for such services was to be 5 per cent of the cost of the house, less $310 which was to be credited on the total bill.

The plaintiff made the preliminary plans, obtained data for specifications, obtained estimates, etc., after which the defendant informed the plaintiff that as the estimates showed the house would cost more than $12,000, he could not build. The defendant thereupon informed the plaintiff that he was through with his services as an architect, and desired to have a settlement for the services rendered. After some negotiations, the plaintiff accepted the sum of $50 as settlement in full of all claims under the contract.

Now, it appears, that the defendant before returning the original plans to the plaintiff, after the settlements noted above, had photographic copies of the plans made. Thereafter the defendant employed another architect, and gave him the photographic copies of the plans to be used in the making of plans which were substantially the same as the plans made by the plaintiff. The house was thereupon erected in accordance with the plans so prepared at a total cost of $14,430.

Thereafter the plaintiff brought the instant action against the defendant for damages for an alleged breach of contract. The plaintiff set forth that he had accepted the sum of $50, as an accord and satisfaction of all claims under the contract, but claimed that the settlement was obtained by the fraudulent representations of the defendant. The trial in the lower court resulted in a judgment in favor of the defendant. The plaintiff prosecuted an appeal to the higher court, where in passing upon the effect of the untrue representations of the defendant, in obtaining the accord and satisfaction made with the plaintiff, it was, in part, said:

"The defendant's representation that he was through with plaintiff's services as an architect was the inducement for the making of the accord and satisfaction. The representation was untrue, since at that time the defendant was using and purposed using plaintiff's plans in the making of plans for a house and in the construction of same. . . . The defendant made this representation for the purpose of inducing the plaintiff to act upon it. The plaintiff relied upon this representation to his prejudice. This constituted a fraud on the plaintiff, and voided the accord and satisfaction. . . .

"The defendant's motive in refraining from making the disclosures was intentional, and arose from his desire to get rid of his contract with the plaintiff and at the same time to avail himself of the fruits of his labor. When the defendant secured the acquiescence of the plaintiff to

the accord and satisfaction by these means he took an unfair and unconscientious advantage of the plaintiff. . . . And he obtained an unfair settlement to the prejudice of the plaintiff, which cannot be permitted to stand.

"Unquestionably the defendant had the right to withdraw from his contract with plaintiff upon paying him just damages for his breach of the contract, but he could not accomplish his end by overreaching the plaintiff. An accord and satisfaction obtained in this way will be treated as wholly nugatory because in law obtained by fraud. . . ."

Following the foregoing statement of the invalidity of the accord and satisfaction relied upon by the defendant, the court directed its attention to the question of the measure of the plaintiff's damages. In this connection it was, among other things, said:

"As a result of the prevention of its performance of its contract with the defendant, the plaintiff was entitled to recover compensatory damages for the loss it had sustained by the defendant's breach. . . . This included, not merely for the value of the services the plaintiff had rendered, but in addition such benefit or profit to it to have made the completed plans and specifications and to have supervised the construction of the house according to its own plans. This item should be arrived at by ascertaining what the cost and expense of the completion of the contract would have been to it, and then the difference between the contract price, less the $310 agreed upon, and this item of cost and expense should represent the profit accruing to it on account of the breach of the contract by the defendant. . . ."

In conclusion, the court set aside the judgment rendered in favor of the defendant, owner, and ordered judgment to be rendered in favor of the plaintiff in accordance with the rule announced above for ascertaining the damages, holding, as outlined in the opinion, that the accord and satisfaction relied upon by the defendant was of no avail because of the manner in which it had been procured, and that the plaintiff was entitled to damages for the breach of the contract by the defendant.

* * *

The Painter

There is a growing recognition of the importance that the painter holds in the paint and varnish industry. Perhaps it is a sense of innate modesty that has hidden his light under a bushel. But there would seem to be no good reason why some of the statistics that show his bigness should not be made public. There should be a source of pride to the painter and interest to the manufacturer and jobber as well in the following paragraphs:

There are 250,000 journeymen painters in the United States, according to the last census.

The painter's average wage is $8 per day.

An accepted rule is that half a painter's wage is the cost of the paint he spreads each day.

Two hundred and fifty thousand painters, therefore, spread $1,000,000 worth of paint a day.

The painting season is now 200 days a year and this is constantly being extended.

Two hundred million dollars worth of paint is used by these painters each year.—Painters Magazine.

Portland Cement Stucco and the Surface Finish of Concrete Block

By FRANC J. GARDNER*

THE charm of stucco has been known since even before the days of ancient Greece and Rome. By these people it was used extensively and through them spread to other lands. The Persians and the Moors realized its beauty, and in truth there is hardly a country where it has not been a favored type of building construction for centuries.

As civilization spread, the use of stucco followed, and it has been and now is used throughout the civilized world. From the coldest countries to the tropics it will be seen everywhere, because stucco has those essential properties that are so desired, namely, beauty and durability. Since it is applied in a plastic state, it can be fashioned and treated in endless ways. Colors and textures are limited only by the ingenuity of the plasterer and the architect. It can be made smooth or rough, white or tinted in many colors, either by the use of mineral pigments or by using colored sand and the coarser colored aggregates. It is adaptable to practically every type of architecture, and is capable to combination with most types of building materials in very effective ways.

Because of these facts, it can be made to lend a distinctively homelike and livable appearance to a house, especially since it never needs painting, and therefore will, from an artistic point of view, mellow with time and become an integral part of the landscape. Age improves its looks, but it does not cause it to decay.

The stucco of early days, as seen throughout Europe, and which has been so admired in conjunction with its use in beautiful French and Italian villas, was made largely of lime. It served quite well for the mild climate of these countries. It was used by the early settlers in Pennsylvania and in New York, but it was slowly attacked by the action of cold and frost. Much of this stucco has lasted well over a century, but only in exceptional cases. I have in mind one particular instance that was brought to my attention some time ago. The house was a stone one which had been stuccoed with lime, and in order to keep up the appearance of the house and to hide the cracks which appeared, the owners had whitewashed it very often. As you know, whitewash is largely lime, and it was found upon examination that this whitewash had added so much thickness to the original stucco coat that in some places the woodwork of the windows was partially obscured.

The introduction of Portland cement, however, eliminated many difficulties which had been experienced previously. As you all know, anything made with Portland cement, when it is made properly, gains strength over a considerable period of time. When correctly applied, Portland cement stucco is as true a type of permanent construction as can be found.

Stucco is a mixture of Portland cement, sand and water, with sometimes hydrated lime or other materials which are not absolutely necessary, but which aid materially in increasing the plasticity of the mix and, therefore, the ease with which it can be applied. It is, as you know, applied while still soft and in several layers, usually three in number. These layers or coats bond to each other perfectly, and form a uniform and homogeneous coat of stucco which should be at least one inch thick.

* Western Technical Department, Atlas Portland Cement Company, Chicago.

Portland cement stucco can be applied to any type of wall construction with entire confidence. The backing, of course, has a great deal to do with the permanency of the whole structure, and it is easy to realize that the best kind of backing is a masonry wall.

A masonry wall of monolithic concrete or concrete block is ordinarily judged the best. It is easy to see why Portland cement stucco on concrete made with Portland cement as the binding medium is the best. When the stucco is applied, the wall and the coat of stucco form what is practically a single mass. In using a stucco made of Portland cement over concrete or concrete block you are getting a coating for that wall which is as permanent as the concrete itself. Good results can also be obtained on walls of brick or clay tile, or even on well-braced wood framing covered with galvanized wire lath. Any walls, of course, must rest on substantial footings in order to be rigid and unyielding, but given a firm base that will not crack, resting on a good foundation, stucco will adhere perfectly to it and will be as permanent as the wall itself. Neither weather nor fire can dislodge or mar it, and the owner will have no fear of the unsightly cracks that have deterred so many from using stucco.

The modern tendency, too, is for more permanent construction. The rise in the price of lumber has brought us to a point where a house built of concrete block, which are just beginning to come into their own, is nearly as economical in many localities as wood frame construction. And although in some places the cost of a concrete block is still slightly higher than frame construction, the advantages in the permanence of concrete block, together with its great resistance to fire, should easily be sufficient reason for building of concrete block instead of wood.

As used with concrete block, stucco is mainly for architectural effect. To build a wall of concrete blocks with an exterior surface that is pleasing in effect is expensive, not especially from the standpoint of obtaining a finish on the block that is pleasing, but because of the greater care that must be taken by the stone mason when laying the block in a wall. When stucco is to be used, very little care need be taken in striking the joints, in preventing the mortar to drop, and it is not necessary to line the blocks up so exactly, because the three coats of stucco will smooth out all inequalities that may be present.

Concrete blocks for stucco wall construction should be rough and of course texture, but not weak and friable. The blocks should be set with cement mortar joints which should be raked out or cut back even with the surface. Before applying the stucco, all dust and dirt should be brushed free from the surface and the latter should be wet down to such a degree that water will not be rapidly absorbed from the plaster, but it should not be wetted down so that the plaster will slip or sag when it is applied.

The ingredients for stucco are cement, sand, water, and sometimes hydrated lime as mentioned before. The fine aggregate should consist of sand or screenings from crushed stone or crushed pebbles, graded from fine to coarse, passing when dry a No. 8 screen. It should preferably be of solicious materials and should be clean, coarse, and free from loam, vegetable, or other deleterious matter. It is hardly necessary to go into detail on this subject, since you all undoubtedly know how important it is to use the proper aggregate.

The hydrated lime that is used should meet the standard specifications for hydrated lime of the American Society for Testing Materials.

The matter of coloring pigments is one that is attracting more and more attention at the present time. While mineral pigments often give very good results, these good results are only obtained because the pigments themselves are carefully chosen for the particular work for which they are intended. The ordinary mortar colors designed for use with lime mortar are not generally satisfactory, and for this reason most manufacturers of mortar colors have pure mineral pigments, especially made for use with Portland cement.

The importance of proper and thorough mixing of the ingredients of the mortar cannot be too strongly emphasized. Machine mixing is in all cases to be recommended in preference to hand mixing. When hair or fibre is used, the method of mixing it with the mortar should be such as to insure good distribution and entire freedom from clots. The ingredients should preferably be mixed until thoroughly distributed and the mix uniform in color and entirely homogeneous. The quantity of water necessary for the desired consistency should be determined by trial and thereafter measured in proper proportion. Many plasterers do not consider this necessary, since they feel that they can tell by the way the mortar mixes whether it has the proper amount of water in it or not. From your experience, however, you know that in many cases the color of your block can be varied slightly by using various proportions of water. The more water you use the lighter the color is likely to be. This is very easily demonstrated, and many of you are undoubtedly familiar with the fact that blocks made by the wet process are many times uniformly lighter in color than those made by the dry. Where white Portland cement is used for the finish coat, this does not apply, but if for any reason grey is to be used it is advisable to remember this point.

In machine mixing, a suitable mortar-mixing machine can be used. In order to get a perfectly homogeneous mixture, it is recommended that the machine mixing should be carried on for not less than five minutes after all ingredients are introduced into the mixture.

When the mixing is done by hand, a watertight mortar box should be used and the ingredients mixed dry until the mass is uniform in color and homogeneous. The proper amount of water is added as before, and the mixing is continued until the mortar has a uniform consistency.

The question as to the number and thickness of coats of stucco mortar can best be answered by assuming that every coat of stucco has its own particular function. The scratch coat is first applied, and its purpose is to furnish an intimate bond and a secure support for the main body of the stucco.

The function of the second coat, which is called the brown or straightening coat, is to establish a true and even surface upon which to apply the finish. It forms the body of the stucco and fills the hollows of the scratch coat. For this reason, an average thickness of ⅜ in. to ½ in. will usually be required.

The brown and finish coats, or the scratch and brown coats, are sometimes combined in two-coat work, which is permissible when the base upon which the stucco is applied is fairly true and even, or when, on account of cost consideration, the best obtainable finish is not required. It is difficult, however, to obtain a satisfactory finish on a coat which runs ½ in. or more in thickness, since the tendency of a heavy coat to bag and slip is likely to produce an uneven surface.

SAN FRANCISCO
PUBLIC LIBRARY

The main function of the finish coat is its decorative value, although since it bonds with the second coat it performs certain structural functions. Since its function is, however, almost solely to provide an attractive appearance, it should be borne in mind that any mixture or any method of application that may detract from its appearance or in any way injure its permanency should be avoided. Herein lies the reason for lean mixtures, which are more likely to be free from unsightly defects than rich mixtures. Lean mixtures are also more likely to improve in appearance under the action of the weather. The finish coat should be as thick as possible consistent with covering capacity, and may vary from $\frac{1}{8}$ in. to $\frac{3}{8}$ in. in thickness, depending upon the type employed. It is very seldom, however, that it is desirable to have the finish coat less than $\frac{1}{4}$ in. in thickness.

It is obvious, then, that first-class stucco should be three-coat work, no matter what kind of backing is used. The bond between the first or brown coat and the second or scratch coat needs to be strong in order to carry the weight of the body of the stucco, and for this reason it is considered preferable to apply the scratch coat the day following the application of the first coat. Except in dry and windy weather, little wetting of the scratch coat should be necessary when the brown coat is to follow within 24 hours. A slight degree of absorption in the scratch coat is probably better than to have complete saturation with water, because the brown coat as well as the others is necessarily mixed with a larger quantity of water than it required for maximum strength. The removal of a portion of this excess water by the suction of the undercoat not only improves the quality of the coat but also insures a better bond by tending to draw the fine particles of the cement into the pores and interstices of the undercoat.

Whereas the interval between the application of the brown coat and the scratch coat has already been recommended above as being relatively short, the interval before applying the finish coat should be as long as permissible under the conditions of the work. The reason for thus delaying the application of the finish is to enable the body of the stucco to obtain its initial shrinkage and a nearer approach to its final condition of strength and hardness, before being covered with the surface coat. The bond of the latter needs to be intimate rather than of maximum strength, and if the body of the stucco has been allowed to set thoroughly and harden, it may be assumed that there is less liability of volume changes in the undercoats to disturb the finish coat. A week or more should elapse between the application of the brown and finish coats, although in many instances where this procedure was not followed excellent results have ensued. It is only an added precaution which may be taken to insure as nearly perfect results as are possible to obtain.

The finish should be applied over a damp but not saturated undercoat, because excess water is liable to prevent the formation of a good bond. Certain types of finish, such as the wet mixtures used for sand spraying, or for the "spatter dash" finish, may preferably be applied to a fairly dry undercoat, since suction must be depended upon to prevent streakiness and muddy appearance and "flat spots." The fact that finishes of this type applied in this manner may set and dry out with little strength is not serious. They gradually attain sufficient hardness with exposure to the weather, and the undercoats provide sufficient structural strength to prevent cracking.

(Concluded in the October number)

THE
Architect and Engineer
Incorporated
Founded 1905 by E. M. C. WHITNEY
W. J. L. Kierulff - President and Manager
Fred'k W. Jones - Vice-Pres. and Editor
G. H. Oyer - - - Advertising Manager
L. B. Penhorwood - - - - Secretary
T. C. Kierulff - - - - - - - Attorney
Associate Editors
Irving F. Morrow - -Architectural Critic
Chas. H. Cheney - - - - City Planning
Chas Peter Weeks - - - - Book Reviews
Emerson Knight, Wilbur D. Cook } Landscape Architecture
Wm. B. Gester - - Inspection and Tests
O. P. Shelley, C. E., F. W. Fitzpatrick } Fireproof Construction
T. Ronneberg, C. E. - - Structural Steel
W. H. Lowe - - - - Roofs and Roofing
Fred'k N. Woods, Jr. - - Rock and Gravel
Chas. Felix Butte - Electrical Construction
J. W. Fricke - - - - School Equipment

Published Monthly in the Interest of the Architects, Structural Engineers, Contractors and the Allied Trades of the Pacific Coast by The Architect and Engineer, Inc.

PUBLICATION OFFICE:
627-629 Foxcroft Building, San Francisco
Telephone Douglas 1828

The publishers disclaim any responsibility for statements made in the advertisements of this magazine.

Terms of Subscription
(Including postage) to all parts of the United States, $2.50 per annum; to Canada 75c additional; to all Foreign points $1 additional

Vol. LXXIV SEPT., 1923 No. 3

LUXURIES RESPONSIBLE FOR HIGH COST OF BUILDING

Years ago, when the "high cost of living" was a bagatelle compared to what it is now, the late J. J. Hill said that after all the problem was not the high cost of living but the cost of high living. Studies of the building situation in the various parts of the country indicate strongly, according to a review by the National Lumber Manufacturers Association, that a substantial proportion of the increased cost of construction nowadays as compared with that of ten years ago, is due not so much to the high cost of materials and labor as to the cost of luxuries in both.

The New Jersey Lumbermen's Association, after a survey of comparative building costs in that state, points out that there really is no parallel between the cost of the dwelling house now and of the corresponding house ten years ago. "As a matter of fact," says that Association, "such comparison is not possible because an entirely different type of house is being constructed at the present time. You will find in the most unpretentious house that is being built today many or all of the following: Sun parlor, window seats, open fireplace, plate rail and panels, kitchen cabinet, expensive electric and bathroom fixtures, combination ranges, beam ceilings, built-in bookcases, colonnades, breakfast nook, oak flooring, hardwood trim. All or many of these items were considered luxuries or fixtures even ten years ago, and were not considered a part of the construction cost; and yet today they are considered to be a necessity and add very materially to the construction cost."

However, there has not been such a change in housing standards in the last four or five years as to make comparisons of costs impossible. The New Jersey Association points out that when the actual cost of lumber entering into the construction of a house is considered in relation to the total cost, and there is further taken into consideration the marked reduction in lumber prices since the spring of 1920, there is no justification for the cancellation or postponement of home building projects. The Association found that the lumber for a house bill, which cost $1775 at Atlantic City in April, 1920, cost in April of this year $1325. Lumber for a typical small house bill in Newark, which amounted to $1201 in 1920, now amounts to $877. Altogether the Association compared prices in 1920 and 1923 on 33 identical bills in as many different cities. The smallest showing in favor of 1923 was a reduction of 17 per cent at Perth Amboy and the most favorable showing was 34 per cent at Rutherford; the average was 27.4 per cent. The New Jersey

Association puts the lumber cost of a frame house at less than 30 per cent of the whole.

A small house of six rooms requires 17,820 feet of lumber. In March, 1920, this amount of lumber cost $2023.48. In May, 1923 (and it would be somewhat less today) it cost $1370—a decline of $653.48, or about 32 per cent. The total cost of this house (built in Cleveland, O.), 22 x 26, full two stories, with slate roof, furnace, wash trays, etc., was $6012 in 1920 and $4940.05 in 1923. In fairness it should be pointed out that back in 1914 the lumber in this house would have cost only $649, but it is not to be expected that such a house will ever again be built in America at such a lumber cost.

In the first place, the general average of all building materials is about twice as high in price as it was nine years ago and labor about the same. No economists hold that the general price level of nine years ago will ever be regained—at least not in this generation. The general average of all commodities is now about 50 per cent higher than in 1914, but with respect to lumber the situation is unique, for, while its price fluctuates from year to year according to varying conditions of supply and demand, its inevitable general trend is toward higher prices over a period of years. This is chiefly due to the facts that the basic supply, the forests, are ever dwindling in the face of increasing population, and that the main lumber supplies are now many hundreds, even thousands, of miles distant from the centers of consumption. The increasing length of lumber hauls, as well as the increasing railway rates in recent years, have been such that the cost of transportation of lumber is now, sometimes, more than the entire delivered cost not many years ago.

THE ECONOMIC VALUE OF LANDSCAPE IMPROVEMENT

Most individuals experience an impression of disappointment when they see a beautiful home, public building or any worthy piece of architecture or sculpture in a barren state, utterly bereft of any touch of plant life. And in contrast, all persons feel a glow of pleasure when they perceive that an inviting home or noble building group is clothed or given a lovely setting of ever-changing plant life with a simple, forceful design that is eloquent of order in the modes of harmony, balance and rhythm. They are aware immediately that the picture is much more attractive. They also are aware that the property and the building have achieved a far higher value both to the owner and to the community. This value can be expressed in esthetic terms, but how many fully appreciate the increased economic worth or property and money value.

Owners individually and large operators in both city and country property have learned that a comparison between bare lands and houses, and those given dignified landscape treatment shows an increase frequently of from 25 to 30 per cent in the selling value. In some instances the percentage of increased valuation is considerably higher. The prospective buyer is usually much more interested in the place which has been well planted than in the vacant one. Emphasis, too, should also be laid upon the economic value of planning and developing a place in the right way at the start rather than an owner's attempt at amateur work over a period of years which is finally recognized as inadequate or unfit, and demands elimination and replanting if the property is to be appraised at its true potential value.

When building new homes in this era, few owners hesitate to

spend money for plants, loam, fertilizer and a gardener's labor. But the great majority hesitate to pay a reasonable fee to a responsible landscape architect for a carefully studied plan. Such a plan may be followed in moderate stages and not necessarily in one season, and it can possibly contribute more to the owner's ultimate happiness than all of the money spent on the interior of the home. The common impression is to the effect that the professional landscape designer's fee is too high, with the result that the owner often turns to the nurseryman or the neighborhood gardener for the solution of his problem. In the matter of selecting architects for good buildings a greater wisdom has been acquired because few now turn to a contractor alone when they want a well-designed home. Rather do they inquire: "Who is the best architect I can employ to meet my home problem?" His fee, to be sure, is decidedly higher for rendering plans than that of the contractor, but in a good artist the owner may repose confidence that the resulting structure will express charm, fitness and practicality combined with beauty.

When a garden is given into the hands of the nurseryman or local gardener, the plants or nursery stock selected individually may be just as good as those chosen by the professional designer, even as the material furnished by the contractor who designs a house may be quite equal in quality to that specified by an architect of high standing. But owners will fare better when they learn the value of paying a fee for that high training and intelligence in design and supervision which can only be expected from those who are less commercial and are willing to make all the sacrifices involved in acquiring a thorough knowledge of landscape architecture and engineering and in developing taste and feeling for all the nobler arts.

The professional man does not buy plants and quickly group them in haphazard fashion without a plan. Instead he goes to measure and get the feel of the ground, not once only but perhaps many times, and at different hours of the day. He takes photographs of both the grounds and the environment before treatment. He returns to his office and makes studies. He may make many sketches before he evolves what appeals to his conviction as the true scheme of planting to be adopted. He may have many interviews with the owners in order to learn their point of view, their tastes, their favorite flowers and shrubs. Does the owner wish a quiet, secluded garden into which he can retire with assurance of privacy, or does he want to share his garden with the neighborhood and tie it up with the color and tone of the section? Perhaps he prefers display or show. If so, it is possible within certain limits to make ornate places very effective and so lend distinction to the town. At last a scheme is adopted and a finished tracing is made, together with a carefully studied list of plants, the preparation of which involves wise decisions as to just the proper plants for particular situations. Then follows elimination, preservation, construction and planting on the ground, and if the owner wishes to see the beautiful picture the designer has had in his mind fulfilled, he will be glad to employ him to interpret his vision. Every owner who has the courage to meet this expense will feel thoroughly satisfied at the conclusion, as to both the esthetic and economic value of such a course. He will feel that the garden expresses his own taste wisely interpreted, which is the one thing most difficult for the inexperienced or amateur gardener, or even the professional one who has not the time to study out the ultimate matured plan.

These same principles of thorough planning and skillful supervision, which include patient watchfulness in details and a ready adaptability in adopting minor changes prompted by inspiration as the picture unfolds, apply alike to all landscape problems, whether of city homes, country estates, public buildings, parks, recreation areas, cemeteries, subdivisions or of town planning. A realization of the full meaning of these considerations might ensure the slow but steady evolution of our gardens and cities into places of enduring beauty.

EMERSON KNIGHT,
Landscape Architect and Engineer.

ARCHITECTURAL GENIUS IN AMERICA

I believe that we all are thrilled by the shimmering beauty of a sailing ship or the stately grandeur of a range of mountains, and, if our attention is attracted to such a study, I firmly believe we will see there can be charm and grace in a simple cottage, and that a city street may be a work of art," says a writer in Scribner's, and continues:

"All that is really needed is a great awakening of interest, for we have splendid architectural ability and genius in America, and it is possible to find and develop more if there is a real call for it.

"We have been doing some remarkable things in architecture in this country in the last score of years—work the equal of which it would be difficult to discover, as far as contemporary architectural expression is concerned, in other parts of the globe. This statement may appear to be over-optimistic, but I do not believe that it is, in view of actual work performed."

AS THE OWNER PICTURES IT

"Life" thus describes the new home, as the owner pictures it after listening to the advice of home-owning friends:

It will be a Colonial cottage in the Tudor Gothic style, revealing the French chateau influence and embodying the best features of the English manor, California bungalow and Adirondacks lodge. It will be heated by hot air, hot water, steam, electricity and gas; it will have a tile, slate, shingle, terra cotta, asphalt, asbestos and thatched roof and will be painted in quiet tones of purple, green, red, yellow and pink. The house will contain many bedrooms, to encourage one's relatives, and very few to discourage them. The living room will be long, low, high, wide and narrow, treated in the Empire, Italian Renaissance and late Flemish manner, with straight lines, a broken frieze and a footless pediment.

The home will be situated on a wind-swept hill-top, on low ground in the midst of a dense wood, ten miles from the station and within easy walking distance of your office.

The Anonymous Architect

(Editorial in New York Tribune)

In his address delivered before the Lincoln Memorial in honor of its architect, Mr. Henry Bacon, Royal Cortissoz, used the phrase "unsigned buildings." To be literally accurate, they are sometimes signed. But who ever turns to look at a cornerstone or read an inscription? The author's name on the title page of a book is certain to pass under the readers' eye. The architect of a great building, so far as the general public is concerned, dwells in a state of complete anonymity.

This is true not only in new America. It has been a habit of the ages, most completely and strikingly illustrated in the case of the great Gothic cathedrals. The historians have unearthed evidence as to the masters who designed Chartres, Rheims, Bourges, Amiens. But not one in a thousand of those who visit or worship at these shrines of beauty and religion could give the name of one. To an extraordinary degree these great churches of the Middle Ages were community products. Yet there were unquestionably master minds to order so much soaring beauty, and fame has utterly passed them by.

An odd trick of the world, surely. So far as length of time goes, the architect outlives all his fellow artists. He builds in the most enduring of materials. Centuries are the unit of his influence and thousands of years often mark the be-

American Institute of Architects

(ORGANIZED 1857)

San Francisco Chapter

OFFICERS FOR 1923-24

PRESIDENT.....GEORGE W. KELHAM
VICE-PRESIDENT.....HENRY H. MEYERS
SECRETARY-TREASURER.....J. S FAIRWEATHER

DIRECTORS

WILLIAM MOOSER.....THREE YEARS
J. H. BLOHME.....THREE YEARS
A. J. EVERS.....TWO YEARS
HARRIS ALLEN.....TWO YEARS
S. SCHNAITTACHER.....ONE YEAR
MORRIS M. BRUCE.....ONE YEAR

Oregon Chapter, Portland

PRESIDENT.....CHARLES D JAMES
VICE-PRESIDENT.....FOLGER JOHNSON
SECRETARY.....WILLIAM L. SMITH
TREASURER.....ORMOND R. BEAN

DIRECTORS

WM. C. KNIGHTON WM. G. PURCELL JOHN V. BENNES

Southern California Chapter

PRESIDENT.....SUMNER P. HUNT
VICE-PRESIDENT.....A. M. EDELMAN
SECRETARY.....CHAS. F. PLUMMER
TREASURER.....ALFRED W REA

DIRECTORS

C. E. NOERENBERG.....ONE YEAR
DAVID J. WITMER.....TWO YEARS
EDWIN BERGSTROM.....THREE YEARS

Washington State Chapter

PRESIDENT.....CARL F. GOULD
SECRETARY.....A. F. MENKE
TREASURER.....CARL SIEBRAND
FIRST VICE-PRESIDENT.....LOUIS BAEDER
SECOND VICE-PRESIDENT.....ROY S. MASON
THIRD VICE-PRESIDENT.....GEORGE H. KEITH

San Francisco Architectural Club

77 O'Farrell Street

PRESIDENT.....MARK T. JORGENSEN
VICE-PRESIDENT.....EDGAR B. HURT
SECRETARY.....CARL R. SCHMIDTS
TREASURER.....LAWRENCE H. KEYSER

DIRECTORS

WILLIAM ROWE FELIX RAYNAUD J. B. MCCOOL

California State Board of Architecture

Northern District

Phelan Building, San Francisco

PRESIDENT.....CLARENCE R. WARD
SECTY. & TREAS.....SYLVAIN SCHNAITTACHER
233 Post Street
EDWARD GLASS JOHN J. DONOVAN JAMES R. MILLER

Southern District

Pacific Finance Bldg., Los Angeles

PRESIDENT.....WILLIAM J. DODD
SECTY. & TREASURER.....A. M. EDELMAN
JOHN PARKINSON MYRON HUNT W. H. WHEELER

ginning of his glory, as the fate of the Parthenon can testify. But the immortality is for his work, not for him or his name. He can die feeling that his labor may live for ages; perhaps meet its just praise among distant generations of alien races. Hope that his name will have an equal share of immortality is slight indeed.

Does the situation point to a law of compensation existing in nature, or a cynical distrust of good architects, or a tender heart toward the bad ones? It can be contended, in any event, that the world would be a more livable place if a similar state of modesty, of fame for the work and none for the artist, were enjoined upon all human creators.

When a Plasterer Gets Rich

When a plasterer gets $119 a week, as some in New York are getting, he should become a wise bird and salt down a big percentage of his savings. By so doing he can break into the class which owns rail stocks and oil wells. Many rich men have struggled to the front on less. In fact, many bank presidents started out by sweeping cigar butts from old banks with wood floors, and they are now commanding banks whose floors are terrazzo.

Lots of people say there is something wrong when a plasterer draws so large a salary. There is many a modest non-plasterer drawing as low as $85 a week whose work is of such nature that it sticks until bedtime, and, if the nerves are not in tip-top shape, until well after bedtime. Such persons pay rather high rentals because plasterers, who take their own sweet time on high pay, are the ones who fabricate the space which runs in competition with completed housing space in the United States.

Of course, there is something wrong, and the plasterer can perch on his scaffold and roll a cigarette while the rest of us stand down below and cuss, or merely stand—just as we choose. But we cannot lay all the onus on the man with the trowel. Two years ago he was willing to work for less, and we turned him down. The remedy lies in taking the high and the low gears out of the construction industry and in putting in a good, serviceable intermediate. You say, "Some more theory," but if this be theory, we must make it practice. For instance, more construction in the winter season will help. You rebut, "Last winter we tried that and look what it did." The answer to that is that winter construction is not a definite practice as yet, and that men who worked all through last winter thought of it only as "velvet."—American Contractor.

With the Architects

Building Reports and Personal Mention of Interest to the Profession

Architects Chapter Meeting

Southern California Chapter of the American Institute of Architects held its August meeting at Los Angeles Harbor. A boat trip around the harbor was taken in the afternoon and a dinner and business meeting was held in the evening at the California Yacht Club. In the absence of President Sumner P. Hunt, Vice-President A. M. Edelman presided. The entertainment program was in charge of Mr. C. E. Noerenberg. Mr. Alex. Brandner gave several piano solos and Mr. Herman Sachs gave a talk on "Color in Architecture."

Automobile Stage Depot

Plans have been completed by O'Brien Bros., 315 Montgomery street, San Francisco, for the Pickwick Auto Stage Company's new stage depot at Sixth and Los Angeles streets, Los Angeles. Louis R. Lurie and associates are the owners. The estimated cost is $250,000. The same architects have awarded a contract to F. L. Hansen, 251 Kearney street, San Francisco, to build a reinforced concrete tourist hotel at Monterey, for Mr. Romie Jacks. The estimated cost of the investment is $500,000.

Chinese Theatre

Architect A. A. Cantin, of San Francisco, has awarded contracts aggregating close to $100,000 for the construction of a three-story Class A Chinese theatre, store and apartment building at Grant avenue and Pacific street, San Francisco. The general contract has been let to Monson Bros., the electrical work to the Central Electric Company and the structural steel to the Ralston Iron Works.

Granted Certificates to Practice

At a meeting of the California State Board of Architecture, Northern District, held on Tuesday, August 28th, 1923, the following were granted certificates to practice architecture in California:

Lionel H. Pries, 858 Clayton street, San Francisco.

Alexander Wagstaff, 658-41st avenue, San Francisco.

Howard W. Higbie, 62 Porter building, San Jose.

Protestant Orphanage Buildings

Working drawings are being completed by Architects Bliss & Faville, San Francisco, for a group of orphanage buildings for the San Francisco Protestant Orphanage on the block bounded by Vincent street, 28th and 30th avenues, San Francisco. All of the buildings will be of frame construction with the exception of the power plant, which will be of concrete.

Buildings for Relief Home

City Architect John Reid, Jr., of San Francisco, is preparing working drawings for a group of buildings to be erected on the Relief Home Tract, Laguna Honda boulevard, for the City and County of San Francisco. Approximately $2,000,000 is available for the improvements, which will include six four-story ward buildings, an administration building, dining hall, chapel and attendant's quarters.

Plans for New Townsite

Professor John William Gregg, member of the American Society of Landscape Architects and landscape architect with the University of California, has recently prepared preliminary plans for the development of the new townsite of Ballico, for the California State Land Settlement Board.

Professor Gregg has lately returned to the University from a year's leave of absence, a part of which was spent in studying city and town planning in different European countries.

San Francisco Flat Building

Plans have been completed and contracts awarded by Architect O. R. Thayer, 110 Sutter street, San Francisco, for a two-story frame flat building to be erected on Bay street, west of Gough, San Francisco, at a cost of $12,000.

Pasadena Bank Building

Plans are being completed by Architects Curlett & Beelman, of Los Angeles, for an eight-story store and bank building for the Pacific Southwest Trust and Savings Bank. The estimated cost of the investment is $1,300,000.

Personal

Architect A. C. Martin has moved his office from 430 to 228 Higgins building, Los Angeles.

* * *

Messrs. G. F. Ashley and Albert J. Evers, San Francisco architects, have opened an office in Los Angeles at 518 Mortgage Guarantee building, 626 S. Spring street. Mr. Ashley will have charge of the Los Angeles office while Mr. Evers will continue at the San Francisco office, 58 Sutter street.

* * *

Joseph H. Roberts, architectural designer and engineer, has moved into permanent quarters at 312 Marine Bank building, Broadway and Pine avenue, Long Beach.

* * *

The firm of Berry & Parker, designers, has been dissolved. The business will be continued with offices in the Home building, Long Beach, under the name of J. C. Berry.

* * *

Mr. H. W. Charlton, architect, and Mr. H. D. Charlton, associate, announce the removal of their office from 333 San Fernando building, Los Angeles, to 18 Central building, 111 E. Broadway, Glendale.

* * *

Fred L. Johnston has resigned as city manager of Santa Barbara, to take effect October 1st.

* * *

Messrs. S. Tilden Norton and Frederick H. Wallis, architects, have moved their office from the Pacific Finance building, and now occupy the entire second and third floors at 716 S. Spring street, Los Angeles.

Architect Moves to Los Angeles

Architect Kenneth MacDonald, formerly of Couchot & MacDonald, 234 Pine street, San Francisco, has opened an office in the Brack Shops building, Los Angeles. Work now under way under the firm name of Couchot & MacDonald will be completed, but all new work will be taken independently.

Pasadena Apartment House

Architects Myron Hunt and Walter Webber, Hibernian building, Los Angeles, have completed plans for a three-story and basement Class C apartment house to be built in Pasadena for the Stanley Apartment Company, at a cost of $150,000.

Laundry Building

Architect Leo J. Devlin, Pacific building, San Francisco, has completed plans for a Class C laundry building to be built at Van Ness avenue and Filbert street, San Francisco, for St. Elizabeth's Infant Hospital.

Steel Contract Awarded

The Golden Gate Iron Works, 1541 Howard street, San Francisco, have been awarded three structural steel contracts the past month, the largest of which amounts to $140,000, and is for the structural steel on the new Elks Club building, Post street, near Mason, San Francisco. This firm will also furnish the steel for a four-story loft building on Stevenson street, near Sixth, for William Ede, and for a six-story apartment house for Mrs. Annie Driscoll. The amount of the latter contract is $15,800.

San Francisco City Hall Featured

The San Francisco city hall is featured in the monthly Manual published by the Richards - Wilcox Manufacturing Company, Aurora, Ill., for August. The descriptive matter consists of an abstract of an article which appeared in The Architect and Engineer, and written by Mr. B. J. S. Cahill. A splendid exterior view of the city hall is shown, besides a picture of one of the elevator doorways, the doors being operated on Richards-Wilcox Ideal elevator door hardware.

Granted Certificates to Practice

The State Board of Architecture has granted certificates to practice architecture to the following: Gene Verge, 358 New High street; Emmet G. Martin, 508 Citizens National Bank building; Joseph C. Longueville, 934 Burck place; Lyle N. Barcume. 5605 Buchanan street; Charles S. Cobb, Pasadena; Frank M. Goodwin, Hermosa Beach; Henry L. Gogerty, Long Beach; and Thos. L. Kerr, Alhambra.

Berkeley Store Building

Architect August G. Headman, Call building, San Francisco, has let a contract for a one-story and basement reinforced concrete store building at University and Shattuck avenues, Berkeley, for Mrs. Roth. Building will contain five stores, and will cost $25,000. Contracts have been let from plans by Mr. Headman on the new Portola School building at an approximate cost of $165,000.

Sacramento Office Building

Plans are being prepared by Architects Woollett & Lamb for a four-story and basement reinforced concrete and terra cotta store and office building to be erected on K street, between 11th and 12th, Sacramento, for Hart Bros.

Los Angeles Science Church

The Ninth Church of Christ Scientist, Los Angeles, will erect a Class A edifice to cost $200,000 at Fifth street and Normandie avenue. The Milwaukee Building Company are the designers and builders.

New Hotel for San Mateo

Architects Morrow & Garren, Chronicle building, San Francisco, are preparing preliminary plans for a reinforced concrete hotel of 150 rooms, with a theater and shops for Mr. B. Getz and associates, to be erected on the De Guerre Estate in San Mateo. The same architects have completed plans for a store and office building at 12th avenue and Clement street, San Francisco, for Mr. Getz, and for a one-story brick store building and garage, 80x120, at Ellis and Buchanan streets, San Francisco.

Oakland Buildings

Mr. Clay N. Burrell, American Bank building, Oakland, has completed plans for a one-story brick commercial garage, 50 x 100, to be erected on East 14th street and 41st avenue for D. M. Hagerty. Mr. Burrell has also completed plans for a brick market building at 20th and Grove streets, Oakland, for Mr. E. M. Allen, and he has completed plans and awarded contracts for an additional wing to the Richardson Springs hotel.

New Church Work

Architect George E. McCrea, 369 Pine street, San Francisco, has completed plans for a reinforced concrete church for St. Margaret's Parish, to be erected at Excelsior avenue and Ellsworth street, Oakland, at a cost of $65,000. Mr. McCrea is also preparing plans for a church and parochial hall for St. Kevin's Parish at Courtland avenue, near Mission street, San Francisco, at an estimated cost of $60,000.

Mayor Jas. Rolph Jr. Honored

Mr. Jas. Rolph Jr., mayor of San Francisco, has been presented with a gold medal by the Societe des Architects of France due to his activity in the construction of the San Francisco civic center. Mr. G. Albert Lansburgh, on behalf of the American group of the society, made the presentation.

Revising Shrine Auditorium Plans

Plans are being revised for the Shrine Auditorium in Los Angeles, which is to cost $1,500,000. The structural features have been changed from steel to reinforced concrete. The plans are being prepared by Messrs. John C. Austin and A. M. Edelman, with G. A. Lansburgh acting as consulting architect.

Women's Club Building

Messrs. Dean & Dean, architects of Sacramento, have completed plans for a one-story hollow tile club building for the Women's Club of Lincoln, Placer County.

Distinguished Architect

Mr. Camille E. Garpin, a distinguished architect of France, has been appointed Professor of Architectural Design at Carnegie Institute of Technology for the coming year, according to an announcement from President Thomas S. Baker. Mr. Grapin's appointment is in line with the announced policy of the Pittsburgh institution to secure for its faculty, men and women of the highest authority in their respective professions.

He was born in France in 1886, and was graduated from the National School of Beaux Arts in 1914, doing graduate work in the following years. While a student at the school, he was awarded the Jean Leclere Prize which is given to the student receiving the greatest number of medals and prizes at the school.

Deplores Absence of Civic Center

"Compared to San Francisco, we of Los Angeles are not even listed on the map of cities with beautiful civic buildings," declared Mr. John S. Meyers, city auditor of Los Angeles, speaking before the San Francisco Board of Supervisors at the weekly meeting, August 20th. "The grandeur of the rotunda and exterior of the city hall of San Francisco is only offset by whole effectiveness of the civic center," said Meyers. "We regret in Los Angeles that our city buildings are so poor, but we are now floating bond issues which will provide money to erect new city structures and lay out a plan for the civic center."

Ten-Story Apartment House

Architect C. A. Meussdorffer, Humboldt Bank building, San Francisco, has completed plans for a two-story and basement, with sub-basement reinforced concrete apartment house to be erected on the north side of Washington street, west of Gough, San Francisco. The project will involve an expenditure in excess of $500,000.

New School Work

Plans will shortly go out for figures from the office of Architect William H. Weeks, 369 Pine street, San Francisco, for a group of three reinforced concrete and brick veneer high school buildings for the Santa Rosa Union High School District. A bond issue for $375,000 has been authorized.

Los Gatos High School

The trustees of the Los Gatos Union High School District have commissioned Mr. William H. Weeks, San Francisco architect, to prepare plans for a two-story reinforced concrete high school building, including auditorium, at an estimated cost of $250,000.

The California Day Labor Law

THE new law passed this year by the Legislature of California relating to public work done by day labor requires the filing of a certificate by public officials showing the total cost of the work they do by day labor. The provisions of the law are as follows:

Section 1.—It shall be the duty of the state highway engineer, the state engineer, the state architect and of every county engineer, county surveyor, city and county engineer, county highway engineer, road commissioner, city engineer, commissioner of public works, superintendent of streets, harbor engineer, flood control engineer, and the engineer of any reclamation, irrigation or other district, political subdivision or agency of the state directing, supervising or superintending, the construction, or in charge of engineering work for or in connection with the construction of any bridge, road, street, highway, ditch, canal, dam, tunnel, excavation, building or structure within the state by day's labor or force account, except emergency and maintenance work and work costing less than ten thousand dollars.

(a) To keep accurate account of the cost of such work,

(b) to prepare and file in his office, prior to the commencement of the work, full, complete and accurate plans and specifications, and an estimate of the cost thereof, except where other and adequate provisions made by law requiring the preparation and filing of such plans, specifications and estimates of cost by some other officer or in some other office; and,

(c) upon completion of any work, to prepare and file in the office of the county clerk of the county in which the work is performed, or if any such reclamation, irrigation or other district maintains an office then in the office of his own such district instead of the office of the county clerk, a certificate in writing verified by him, in the same manner as complaints in civil actions, setting forth

(d) the estimate of cost,

(e) names of bidders with prices bid,

(f) changes in adopted or approved plans and specifications,

(g) that the work performed has or has not been done in accordance with such plans and specifications,

(h) a list of any publicly-owned equipment used in the work, and

(i) an itemized statement of the actual cost of all labor, materials, rentals, repairs, compensation, and other insurance, transportation of labor, equipment and materials, engineering or architectural services, including the services of public employees in connection with the work, and any and all other cost entering into the work performed.

(j) including a reasonable amount for depreciation of publicly-owned equipment used in the work and the cost of repairs thereon while so used.

Section 2.—Such plans, specifications and certificates shall be open to inspection and examination as a public record.

Recent Birchfield Boiler Contracts

Following is a list of some of the recent Birchfield boiler installations:

Hodges building, Everett, Washington.

Wisconsin - Illinois Apartments, Tacoma, Washington.

Pickering building, Montesano, Washington.

Temple Beth Israel, Portland, Oregon.

Oregon Belmont Corporation, Portland, Ore.

Women's Hospital building, Portland, Ore.

West Lynn Gymnasium, Portland, Ore.

Sekiu School District, Clallam Bay, Wn.

Springdale Dairy, Tacoma, Washington.

John Finch School, Spokane, Wn.

Twin City Fuel Company, Chehalis, Wn.

Loney Apartments, Tacoma, Washington.

Spokane School District, Spokane, Wn.

Carman Manufacturing Company, factory, Spokane, Wn.

B. & H. & S. Smelter, Bradley, Idaho.

About Wilson Rolling Steel Doors

The first Wilson rolling steel doors were installed in 1876. The manner in which they met a definite industrial need won them immediate recognition. Today they are in successful use in railroad buildings, warehouses, piers, and industrial plants throughout the country and in foreign lands.

The durability of Wilson rolling steel doors is shown by the fact that installations made many years ago are still rendering satisfactory service. They offer maximum fire resistance and discourage theft. Overhead and out of the way, they afford maximum useful floor space. They are easily operated.

All gears are protected against exposure to the elements. The slats are interlocking; in case of serious damage new ones can be readily inserted and the damage quickly repaired. The manufacturers state that it is advisable to make provision for rolling doors at the time the plans for a building are being considered.

Field of the Contractor

When the Surety Company Wagers on the Contractor's Integrity

By FREDERICK N. WITHEY, Vice-President, National Surety Company*

WHEN a surety company signs your bond for $5000, or $50,000 or a half million dollars, the question is not: "Can you meet the amount of this bond on a certain day. Neither is it a question as to whether you have the financial assets to meet the amount of the bond. Fundamentally it is a question of your character. What is the history of your business career? What is your record? And based upon these things the surety companies gamble on the integrity of human nature.

There are exceptions in which the surety companies require just as much of a material collateral as do the banks, but these are exceptional cases which prove the rule. Primarily, the surety business is a business of gambling on the character and integrity of men.

Therefore, surety companies must know something more than ordinary about men. They must know how men will act and react, not only in business life but in private life, so they have deduced from their statistics for the past 40 or 50 years a law of averages similar to the mortality tables of the life insurance companies, and from this law of averages they are able to tell something concerning your tendencies according to race, age, sex, occupation. If you have a tendency for illegitimate speculation, for gambling, for the race track, the surety companies are naturally interested in finding it out. Naurally they are much interested in how you are living and what you are doing with your money.

From the law of averages they learned many things pertaining to the races of men. They learned that generally speaking the continental European does not have as high a standard of business integrity as the Anglo-Saxon or the English speaking peoples. Among the continental Europeans the Hollanders come first in industry and integrity. Racially they are stolid, frugal, phlegmatic, and it is seldom that a Hollander goes wrong in money matters. Next come the Swedes, the Danes, the Finns, the Norwegians, the Swiss and the Germans. You will notice that these are the northern European races. The Scandinavian does not often go wrong in money matters, but when he does he takes everything movable.

The Slavs of Russia and of Poland, and the people of the Balkan states generally, of Greece and of Turkey are never bonded, so far as we know, by a commercial company. All the Latin races are more susceptible to temptation than the people of northern Europe or the Anglo-Saxons, and there are many small defalcations, but they do not have the courage of the Scandinavians, who, having once made up their minds to go wrong, "make a good job of it." Of course, I make an exception of our friend Ponzi of Boston. He was "no piker."

The Chinese have the reputation of being the most honest race in the world, surpassing the English-speaking people in business integrity. Without going into this deeply, I may remind you of the fact that they have had a little custom for centuries in China of slashing off a man's head if he stole even 25 cents worth of property. I have an idea that such severity would make almost any of us keenly respect the law. My belief is that the honesty of the Chinaman is honesty of fear rather than of principle. Centuries of severity have drilled into his being fear rather than respect for the law. It is also my firm belief that such standards of honesty as prevail among the English-speaking peoples is generally an honesty of high principle that respects the law—except, perhaps, the Volstead act.

You may be surprised to know that fully 70 per cent of all defalcations and embezzlements are committed by men under 31 years of age—men who have not got a grasp on life, and who lack poise and balance. The middle-aged man seldom becomes an embezzler, but if he does throw off the restraints of integrity that have accompanied him into middle life he takes a much larger sum than younger men.

The surety companies say to you that whether he be your cashier, your treasurer, your fellow director, a receiver, a

* Address delivered before the Associated General Contractors of America, Northwest Branch, St. Paul.

guardian, a trustee and administrator, even your own partner in business, whether his station be high or low, if he is handling the money of other people you should check him up frequently. Every few mornings you read in the paper: "Trusted Man Has Wrecked Institution." Who could wreck a business institution but a trusted man? Certainly not a man whom you did not trust.

You have no moral right to subject to temptation your partner, your cashier, your treasurer or any other man connected with you in business. You should keep your books thoroughly checked, not because you distrust men, for most men in the business world are honest, but because you have no right to tempt them.

The surety companies do not like to bond a man who has a wife continually tempting him to live beyond his income. I know of one of the finest men in a Canadian city who is behind prison bars today for five years because of the social ambitions of his wife. She wanted more diamonds, more high-priced furs, more high-powered cars, and that man is serving a sentence for taking $60,000 from an estate he was handling.

The best possible risk for a surety company in the world is the man who lives within his income and saves something. If he is living within his income he is gradually getting better off in life. He could liquidate his affairs at any time, and though he might not have a large surplus he would be even with the world. Such a man has no temptation to go wrong in money matters.

The embezzlers and defaulters largely come from that class of young men who have not really found themselves in life, or from the older men who become consciously or unconsciously "four-flushers" in society. They join all the country clubs and make a "flash." They give social functions that they can't afford. They keep themselves in debt, they are troubled, worried, harassed and in a moment of temptation become embezzlers and defaulters; so I say the best possible risk is a man who saves and lives within his income.

Now, I will say something about what the surety companies call the strange psychology of the surety business. If you are a psychologist, you may call it "freak" psychology, but at any rate it yields some rather amusing generalities. One of the first of these generalities is that a married man is a much better risk than a bachelor in a ratio of 6 to 1. Now we like our bachelor friends, and believe in 'em, but I am only emphasizing a historical fact when I say to you that society at large has never regarded the bachelor as much of an asset. The Romans would not permit a bachelor to inherit a legacy under their laws, and about 25 per cent of our western states have already passed laws taxing our bachelor friends a per capita tax just for the privilege of existence. When I told this in Indianapolis some bachelor yelled: "It's worth the price of the tax just to see the married men get theirs." George Ade said: "You married men are nothing in the world but bachelors who have weakened under the strain of moonshine, guitar music and goo-goo eyes." Nevertheless, I know of no way our bachelor friends can square themselves with the surety companies in particular, or soicety in general, so effectively as by taking wives.

It is a strange phase of the surety business that you find few of the so-called "nuts" or "cranks" among the defaulters. We don't know the reason. It may be that the crank stands for something in the way of principle and convictions, and stands for it to the limit. In contrast to the crank is the man sometimes termed the "good fellow." We all want to be good fellows. They are all liberal and generous. They grab the check in the cafe and say, "Let me pay that, John." But his very generosity is against him as a surety risk. Why? Because he is willing to live beyond his income and drifts with the tide of least resistance. The surety companies know that in a moment of temptation such a man is apt to slip a cog and take another man's money.

Another man who is a good surety risk is the violently profane man. He shocks our sensibilities and violates our ideas of propriety. He uses profanity when decent English would be much better, but it is a strange fact that few violently profane men are found among the embezzlers. I don't know the reason. It may be that when the violently profane man has anything against his fellow men or society he "gets it out of his system," and that ends it.

Another good surety risk is the fat man—those big sleek, jolly, good-natured Falstaffs of life. You remember Shakespeare made Caesar say: "Surround me with fat, sleek, good-natured men who sleep well at night. Yon Cassius hath a lean and hungry look. He thinks too much." One thin man said to me: "The only reason why a fat man is honest is because he is too fat to run and get away with it."

We have all heard of the fellow who says that every man has his price. That is an unfortunate saying. First of all, it is not true. The surety records show beyond question that the overwhelming majority of men in all classes of business are men of high integrity. If that were not so, surety companies could not exist for six months. Second, it is unfortunate for the man who says it, because it shows

Contracts with Bond vs. Day Labor Without Guarantees

A PRESENTATION of the merits of the contract system with bond protection as opposed to the day labor method, with unguaranteed costs, was made to the board of directors of the Merced Irrigation District at a special meeting, August 21, by representatives of the Contractors' Association of Northern California and Southern California Chapter, Associated General Contractors of America. This presentation was made as a result of the recent action of the directors in rejecting contract proposals for erection of the Exchequer dam and authorizing the consulting engineers of the district to do the work by day force. Messrs. Paul H. Ehlers and Lynn S. Atkinson, engineering contractors, and E. Earl Glass, executive secretary, represented the Associated General Contractors and W. J. Wilkinson and Arthur Grier, engineering contractors; W. G. Lloyd, secretary; Herbert Nunn, manager; Walter C. Howe, engineer, and George Mattis represented the Contractors' Association of Northern California.

Mr. Herbert Nunn acted as spokesman for the contractors' committee. He was formerly chief engineer of the Oregon State Highway Department. He stated the contractors' position as follows:

First—That the committee represented an industry second only in importance to the agricultural industry in the United States.

Second—That the organizations were vitally interested in the American principle of contract work with bond protection to the taxpayer, against that of day labor with its unguaranteed costs. Mr. Nunn stated that in this particular case, the engineer prepared an estimate and had been awarded the work by the board; that he, therefore, was placed in the position of a contractor with this exception, that he was not required to furnish a bond to guarantee the completion of the work within his estimate or money.

Mr. Paul H. Ehlers, member of the Associated General Contractors of America, stated that engineering and construction are essentially different in character, although there is a relationship. The engineer is theoretical, the contractor practical; the engineer plans, the contractor executes; the engineer visualizes, the contractor materializes.

Most construction engineers are concientious in their efforts but records show that their efforts often miscarry. Frequently the engineers' estimate is made low so as to appear favorable to the clients; obviously the contractors' bids seem high by comparison, but ultimately the actual cost when done by day labor exceeds both, and often enormously.

The construction engineer has everything to gain and practically nothing to lose—should he be successful, he fortifies himself to enter the contractors' game; should he fail to meet his estimates, the owners pay the bill but the engineer still gains his fee and experience at the owners' expense.

When the engineer constructs by day labor, there is no higher authority to criticize his work. It may be slighted to save costs, but when let by contract, the work is criticized constantly and the best work is most likely to obtain, even though the entire resources of the contractor be consumed, the bond he gives completes the work satisfactorily.

The contractor's commodity and principal stock-in-trade is managerial ability, the accumulation of years of experience; this he pledges, together with his fortune, to serve his clients and guarantee his contracts with an unquestionable, unimpeachable bond.

Mr. W. J. Wilkinson, vice-president and general manager of the Granite Construction company, and a director of the Contractors' Association of Northern California, stated some of the reasons contractors were able to do construction work cheaper than it is possible to do the same work under the day labor method. He drew attention to the fact that any equipment purchased new must be heavily depreciated on the first work that it performs and that thereafter the depreciation is small as it has been written down to its second hand values. Contractors, he said, acquired their equipment a portion at a time and heavily depreciated on each new job, only the small machines purchased new for that job. He compared the low average depreciation charges of the contractor with the enormous depreciation necessary to be made where all new equipment is purchased by a public body for a project to be handled by day force.

---

he has fallen into a bad philosophy of life. Let me repeat that the great majority of men are of high integrity. Out of 7,000,000 bonds actually written involving the character and integrity of 7,000,000 men, only 70,000 went wrong; that is, only one out of a hundred.

Out of the 70,000 that went wrong only 1000, or one-seventieth of one per cent of the total number went wrong deliberately, criminally and with malice aforethought. The other 69,000 went wrong because of booze, women, illegitimate speculation, gambling, influences that tempt men from the paths of rectitude—and they never intended to go wrong.

Mr. Wilkinson also spoke of the difference in the efficiency of men who depended on the success of the contracting firms, that many bids submitted by his firm had been rejected in the past, because the prices bid exceeded the engineers' estimate and that during eighteen years of experience he had never known of a single instance where the work was done for less than the bid, but that in many cases the cost of the work by day labor had exceeded the bid as much as 100 percent and he predicted that if the irrigation work in question here were done by day labor that the members of the board would, after the work has been completed, regret that they didn't accept the lowest responsible bid and be protected by a stated cost backed up by a bond.

Mr. E. Earl Glass pointed out particularly examples of dam construction and irrigation work such as that now being undertaken by the Merced district on which day's work had proven very costly to the owners. In this connection he read a letter from Mr. F. A. Gillespie, who built a diversion dam on the Gila river in Arizona. This dam is 1,800 feet long and the first estimate of cost was about $1,000,000. In his letter Mr. Gillespie says: "I finished this dam by day's labor and the actual cost of finishing it was twice as much as the estimate. So naturally in the future I would hesitate to have any work done except by contract and by responsible contractors."

Another letter from Mr. Louis C. Hill, of the engineering firm of Quinton, Code & Hill, which has done extensive dam and irrigation work, was read, stating it was the general policy of that firm to recommend to its clients that the work be done by some first-class contracting firm. "Any reliable contractor," says Mr. Hill in his letter,"experienced in the class of work bid upon would have an experienced organization which should be able to do the work for a price, including his reasonable profit, less than it could be done by force account, provided all the proper charges were made against the job in the latter case. The cost of building up an organization and getting it in first-class operating condition has already been made by the contractor and can be distributed over a number of jobs instead of one as would be the case if the work were done by force account."

Mr. Arthur Grier, engineer and contractor of long experience, presented a clear and forceful argument in favor of the contract method. He made the point that the taxpayer could very properly demand that the engineers who have been awarded the contract for doing the work, be made to show their resources of capital, experience, organization, and construction reputation as a condition precedent to their undertaking to spend the large amounts of money involved. He pointed out that the competition was entirely favorable to the contractor inasmuch as the engineer did not make a firm offer backed by suitable guarantees and that he had nothing to lose in case the work ran over the estimate as has been so frequently the case on day labor construction. He further stated, that the board was acting as trustees of taxpayers' money and should diligently consider whether they were acting for the public interests in undertaking to spend the bond moneys without guarantees whatsoever, that the proposed utilities were being completed with the funds available. It is a serious question whether bonds should be authorized for public works without a definite guarantee, that the proposed construction will be completed with the proceeds of the bonds, and asked that the board seriously consider rescinding their former action in handling the work under a definite contract.

Plastering Not a New Art

Plastering as an art was practiced more than 4000 years ago, and fundamentally it is the same today as it was in those ancient days, according to Mr. T. D. Sexton, president of the recently organized Master Plasterers' Association of Alameda County, California.

The methods of preparation and application are basically the same today as they were in the days of Tut-Ankh-Amen, whose tomb recently uncovered in Egypt revealed splendid examples of the plasterer's art, said Mr. Sexton.

It is to maintain the great traditions surrounding the ancient handicraft, one of the oldest known to the building industry, and to keep step with east bay progress that is demanding better building, that the Master Plasterers' Association of Alameda County has been formed.

Open Los Angeles Office

Steffens-Perry-Lomax, Inc., of San Francisco, have opened offices at 608 Homer Laughlin building, Los Angeles, to serve architects and contractors with complete engineering and field work as well as supplying steel sash, steel rolling doors, metal factory and toilet partitions, metal interior trim, mouldings and doors. This company is more than a sales organization, its personnel having had many years of experience with leading eastern construction firms.

Designing New Church

Architect Henry H. Meyers, Kohl building, San Francisco, is preparing plans for a frame and brick veneer church for the First Methodist Society of Alameda, to replace the edifice recently destroyed by fire.

Minimum Charges for Architectural Services

THE Illinois Society of Architects has adopted a schedule of proper minimum charges which undoubtedly is being ignored by many architects and especially by that class who berate the small remuneration they gain from architecture — speaking financially — and who possibly would be shocked if they saw in a recent issue of the Chicago Daily News a government analysis of building prices as applied to a ten-room house. This analysis was prepared under the auspices of the Department of Commerce, and is as follows:

The cost of the house to the buyer was taken at $10,500.

Materials comprised 29.3 percent.

Labor comprised 26 percent.

Contractor's overhead and profit 23.1 percent.

Land 15.2 percent.

Sales commission 4 percent.

Architect's fee 2.4 percent.

This analysis, says a writer in the Monthly Bulletin of the Illinois Society of Architects, was presented in circular form with the various percentages exhibited by segments of the circle. It almost required a magnifying glass to see the insignificant segment assigned to the architect's fee. There could be no better argument for the insistence on a proper charge being made by architects not only to reimburse them properly for all the expenses to which they are put, but in addition, to reimburse them for the "know how" of architectural practice. If the sales commission is 66 percent more than the architect's fee there must be a very large proportion of it devoted to compensating the real estate man for his ability to obtain a buyer, either through his reputation as an honest realtor, or through the means he has developed to move the property quickly.

Surely the architect is entitled to a reimbursement or a profit on his ability to render professional services in an honest, fair and square manner. . . . No architect who respects himself or his social or financial position will accept work that must be gained by fees so low that there is no hope of livable compensation. A stiff self respect oftentimes is the only thing necessary to demand and obtain a commission worthy of his time and ability.

If architects would cultivate the ability to convince their clients that their fee is saved many times over because of the services they render, they will go far toward gaining a larger slice out of the circle. They should, however, not attempt to "grab" all they can at the expense of the owner, but should render such service that their share will be increased because of the good results obtained. It seems idle to bring before architects this question of proper mini-

Building in July Up to Normal

Official reports obtained by S. W. Strauss & Co. from 270 cities for the month of July show a total of $243,004,821, indicating that building activities during the seventh month of the year kept well up to normal; in fact, revealed some surprise to many who believed building throughout the country generally had begun to slacken.

An analysis of the activities in important cities showed that the seasonal decline, which is usually manifest in the comparison of June and July figures, was even less this year than usual. During the past decade July has not shown an increase in volume of building over June more than three or four times, notably in 1915, 1916 and 1921. Last year, which was a record year in the building industry, July showed a much greater decrease from June than was indicated by the figures of these months this year.

Following is a summary of reports from twenty important cities:

Cities	July, 1923	July, 1922	June, 1923	Gain July-July	Gain July-June
Atlanta	$1,913,080	$1,208,228	$2,540,178	$ 704,852	
Baltimore	4,796,609	4,226,520	2,713,140	570,079	$2,083,469
Boston	3,472,273	3,895,021	4,042,264		
Buffalo	3,549,000	2,873,120	2,097,000	675,880	1,452,000
Chicago	16,495,150	16,214,300	17,683,550	280,850	
Cleveland	8,457,040	11,177,450	4,020,900		4,436,140
Dallas	1,761,603	1,409,442	1,648,155	352,161	113,448
Detroit	8,103,809	7,389,769	9,731,824	714,040	
Indianapolis (Est.)	2,500,000	3,349,348	2,750,000		
Kansas City, Mo.	1,807,850	1,944,500	2,981,705		
Los Angeles	15,083,273	8,064,018	15,074,446	7,019,255	8,827
Milwaukee	3,481,580	2,653,802	2,450,354	827,778	1,031,226
Minneapolis	3,873,850	4,156,125	2,611,215		1,262,635
New Orleans	1,425,200	1,880,900	1,397,125		28,075
New York	51,833,287	34,022,331	57,383,003	17,601,501	
Philadelphia	11,346,155	10,531,810	8,370,875	814,345	2,975,280
Pittsburgh	2,864,340	3,034,464	3,650,015		
San Francisco	3,237,115	3,024,036	4,213,346	213,079	
Seattle	3,122,315	1,559,205	5,230,446	1,563,110	
St. Louis	2,906,463	1,985,947	2,905,865	920,516	598
Totals	$152,029,992	$124,600,336	$153,495,406	$32,257,446	$13,391,698
				27,429,656	1,465,414
				Net	Net Loss

mum charges, but if the government presents figures that are of such a demeaning character, the architect should express their resentment by demonstrating that they are capable of earning the commission that is rightfully theirs.

BOOK REVIEWS

Edited by
CHARLES PETER WEEKS

The Chicago Tribune Tower Competition. 660 pages, 8¼ x 12¾. Published by the Tribune Company, 7 South Dearborn Street, Chicago. Price $5.

As a permanent compendium of this architectural contest, the Tribune has published a volume called "Tribune Tower Competition." The program of the competition is furnished, along with all material used in inaugurating the competition. The report of the jury of award, biographies of the winners, architects who submitted designs (arranged first by nation, then alphabetically, and then in the order in which their designs were received). Then follow twenty-five views of the three prize-winning designs and a reproduction of the southwest perspective drawing of the other designs received.

"Tribune Tower Competition" is said to be the first handbook of modern skyscraper construction. In it are presented the genius, the experience, the ingenuity of the architects of twenty-three nations. It constitutes an encyclopedia of skyscraper design—the first book of its kind. The skyscraper previous to the last few years has meant little as a separate architectural form. Beauty has too often been flagrantly discarded for utility. Imitation or adaptation of previous building forms was resorted to in most efforts to attain an unusual effect. With a few exceptions, architects have disregarded the fundamentals of the skyscraper's peculiar "cage" construction. "Tribune Tower Competition" contains two hundred and sixty different solutions of one architectural problem, presenting an array of designs, in amazing variation, but many of them of the highest artistry.

Planning and Designing Small Houses. Published by National Lumber Manufacturers Association, Chicago, Ill. Sent free on application.

This is the first chapter of a series on "Lumber and Its Utilization." The purpose of this chapter, in what will ultimately be an authoritative book on the general subject, is to give architects, builders, contractors and home owners the latest lessons of experience and science in building small houses that will be beautiful, sanitary, fire-resistive and economical. "It is a common sight," says the preface, "in residential sections of our city to see unsightly rows of houses which are built by the mile and sold by the foot," whereas at no more cost they might be varied and attractive.

The essentials of good architecture are presented briefly, with suitable illustrations. Space is given to discussion of the exterior materials of the house, such as clap-boards, shiplap and flat boards, and stucco on metal lath. The importance of using thoroughly seasoned lumber is emphasized and the different species of wood suitable for small house building are discussed. Instructions are given as to the use of siding in its various forms, and also of sheathing and studding fire stopping and roof coverings. The correct construction of porches and outside details, interior finish, floors, doors, trim, windows, built in furniture, etc. are all duly covered.

A special feature of the pamphlet is a page devoted to a catalog of sources of reliable building plan service. This gives the names and addresses of all the regional associations of retail lumber dealers, and the addresses of the American Face Brick Association, the Common Brick Manufacturers' Association, the Lambie Concrete House Corporation, the Portland Cement Association, and the Indiana Limestone Association. It also includes a list of lumber trade journals, both wholesale and retail, and a list of other periodicals helpful in home building, including The Architect and Engineer.

Fresno Public Buildings

Architects Eugene Mathewson and James S. Arnott, associated, of Fresno, have submitted a preliminary report to the supervisors of Fresno county recommending purchase of two blocks as a site for the construction of a group of public buildings, including a city hall, library, auditorium, post-office and additional wing to the county court house. A bond election is proposed.

Phone Doug. 3123-4 Oak. 5050-1
EASYSET
STORE FRONTS
GLASS OF ALL KINDS
Mirrors Art Bevel Plate
Cobbledick-Kibbe Glass Co.
666-668 HOWARD ST.
SAN FRANCISCO, CAL.
WASHINGTON AT THIRD ST.
OAKLAND, CAL.

DURABILITY

Architects and builders stake their reputations on the walls of the buildings they erect. A builder's reputation can only endure as long as the walls he builds. BUTTONLATH walls are not only more economical, but they are permanent—walls that will outlast the building foundation itself.

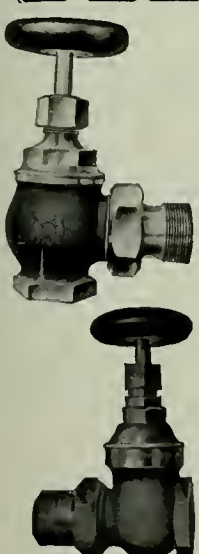
Buttonlath Manufacturing Company

Buttonlath

207 Balboa Bldg., San Francisco

KENNEDY

RADIATOR VALVES



Unfailing reliability of service, reasonable prices and the guarantee of satisfaction that a long-established company is able to furnish, make Kennedy Radiator Valves the best buy for steam and hot water service on the market.

We can honestly recommend them for use anywhere, and invite a close scrutiny of those points of design and construction that sets them apart as decidedly superior. They come in every desirable type—straightaway, angle, offset, corner, etc.

Other Kennedy Valves for handling water, steam, oil, acids, gas, alkalis etc., in more than 500 distinct types and sizes are at your service. Our catalogue illustrates and lists them all. Send for a copy.

THE KENNEDY VALVE MFG. CO. ELMIRA, N.Y.

Branches and Supply Depots:
NEW YORK, 95 John Street BOSTON, 47 India Street
SAN FRANCISCO, 23-25 Minna Street
CHICAGO, 228 N. Jefferson Street
Sales Offices:
Salt Lake City Seattle El Paso

BUILDING FOR H. MUELLER MFG. CO., LOS ANGELES

Substantial Buildings Erected to Handle Increased Business

A CONSTANTLY increasing demand for its goods has necessitated substantial expansion of both the San Francisco and Los Angeles headquarters of the H. Mueller Manufacturing Company. The present accommodations of the company in Northern California, as well as in Southern California, are inadequate, and two new buildings, designed especially to answer the needs of this enterprising concern, have just been completed. Pictures of both buildings are shown on this page.

The Pacific Coast branch of the H. Mueller Manufacturing Company was established in 1912. According to Mr. T. F. Leary, the San Francisco manager, the company's yearly business for 1922-23 shows an increase of 918 per cent above the average monthly business of 1915. The new San Francisco building is located at 1072-76 Howard street, while the Los Angeles office and warehouse are at 2450 Hunter street. Mr. W. L. Jett is manager of the Southern California office.

BUILDING FOR H. MUELLER MFG. CO., SAN FRANCISCO

Main Entrance, Brownstein-Louis Company's Factory Building, Los Angeles, California, John Parkinson, Architect: Executed in dark standard buff Terra Cotto with white mottling. Columns above entrance also Terra Cotto.

BEAUTIFY IT!

FOR the modern industrial building Terra Cotta offers splendid possibilities for achieving this result at a cost well within the limits of sound economy.

Distinctive treatment carrying the utmost in advertising value is readily attained and violates no precedent or necessary canon of good design for this class of building.

Consider the possibilities in this direction of color enrichment alone. No other material presents such an extensive and varied palette.

Literature pertaining to Terra Cotta and its resources for chromatic design will be sent on request. Address **National Terra Cotta Society,** 19 West 44th Street, New York City.

TERRA COTTA

Permanent Beautiful Profitable

The West's Most Unique Highway

TRAVELERS who have made the motor trip along the rim of the Mexican border in Arizona and Southern California will never fail to recount their experience on that stretch from Yuma to Holtville, writes Leland C. Lewis in the Highway Magazine. After crossing the sluggish Colorado at Yuma on the gigantic Ocean-to-Ocean highway bridge, the next eight miles is through the lands belonging to the Yuma tribe of Indians.

Signs of civilization are left behind with the crossing of the Southern Pacific railroad tracks, and soon the car is again laboring through heavy sand. Stretching from the south as far as the eye can see, and to the north for a considerable distance, is a ridge of towering sand dunes, as stark and bare as Sahara's waste save for a few sprigs of dwarf mesquite and an occasional shaft of Sahara cacti.

Just as the tourist begins to wonder whether or not it will be possible to go any farther, something new in the line of road construction looms up ahead of him. It is the famous Holtville-Yuma plank road, an innovation in highway building, that was completed shortly before the nation entered the late war.

Laid side by side, with no under trussing, are two by six planks, six feet in length, that are held together with a piece of strap iron on both sides and another in the middle, to prevent creeping. The planks have been given a coating of creosote, and show little wear considering the length of time they have endured the torrid summer heat and the terrific sandstorms. The road is built in all defiance of the laws of civil engineering, and appears as though a transit was never used at any time during its construction. Signs cautioning drivers to maintain reasonable speeds are unnecessary, as the curves are so abrupt and the track so narrow that any foolhardy action would immediately precipitate a machine headlong into the loose sand, which would necessitate men and mules and hours of time to extricate it.

The surrounding sand is drifted into hummocks of the most fantastic shapes, and is so finely granulated that it would not hold up as a base for concrete. It takes only a slight breeze to send it whirling over the planks, thus obstructing traffic. For that reason scrapers and drags are stationed at intervals so that the road crew may have easy access to them.

The last remaining miles to Yuma Well are perhaps the most inspiring of the trip.

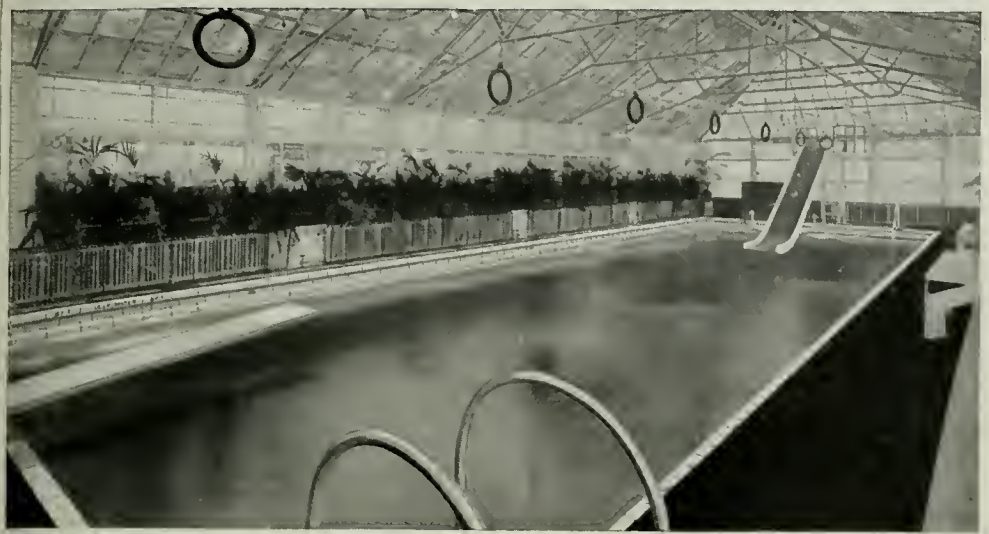
On going down a steep decline, one comes to the first well, a distance of 22 miles from Yuma. The California Highway Commission keeps men stationed at this point to attend to the upkeep of the road and to aid travelers. A number of frame buildings house the men, and corrals and stables nearby provide accommodation for horses and stock.

During the present year a splendid highway will be completed over the entire route, and the sixty odd miles that now require a good four hours to traverse will easily be made in two and a half.

The Pacific Highway

THE following statement is issued by Mr. R. M. Morton, California State Highway Engineer, concerning the completion of the Pacific highway into Oregon:

"Judging from letters received in various California cities emanating from the Portland Chamber of Commerce, there apparently exists in the states of Oregon and Washington an erroneous impression in regard to the attitude of the California Highway Commission toward the uncompleted portion of the Pacific Highway between Redding and the Oregon state line. The state highway engineer wishes to assure our own people in the northern part of the state and the residents of



Pool on the estate of Mr. Louis F. Swift, Lake Forest, Illinois.
The tile lining is laid up in Medusa Waterproofed White Cement, preventing absorption of water through the joints. Messrs. Ralph C. Harris and Byron H. Jillson, Chicago, Architects.

Interesting Bulletins and complete specifications will be gladly sent upon request. The Sandusky Cement Company, Department P, Cleveland, Ohio.

Medusa Stainless White Cement (Plain and Waterproofed) and Medusa Waterproofing are carried in stock and sold by leading building-supply dealers in California, Oregon and Washington.

MEDUSA
WHITE CEMENT

Oregon and Washington that the need for paving about 16 miles of highway still unfinished between Redding and the Oregon line is painfully apparent to the California Highway Commission and its engineers.

"The fact that this distance is not covered with hard-surfaced pavement cannot be deplored any more by the residents of the adjacent states than it is by our own officials. But California's highway construction problems are of tremendous magnitude and in the past it has seemed to be of more benefit to the state as a whole during the period that inter-state automobile traffic was not so important as it now is, to endeavor to satisfy the needs of our own thickly populated communities and give them hard surfaced pavements, rather than to extend our work to meet the highways of the adjacent states.

"The seventy-three million dollars which California has expended for highway construction has been spent in bettering the lines of communication within the borders of the state. The answer to the question as to why the section between Redding and the Oregon line is not paved is simple; our highway needs and our motor traffic have outstripped our financing and until a new method of financing is provided which will be capable of expansion into figures exceeding two hundred million dollars, the State of California will not catch up with the requirements which are imposed upon us for motor highways, both by our own people and our visitors.

It is to be regretted that any impression has been circulated in Oregon and Washington that we are not alive to the needs of the section of highway between Redding and the Oregon line. We can say, however, that this road is in better condition than any of our other inter-state connections. It has been graded throughout, with the exception of 17 miles, which is now under construction for grading and gravel surface. With this exception, it has all been surfaced with rock or gravel and it is maintained in the best possible condition for such type of improvement.

"The revenues from the gasoline tax may be used solely for the purpose of maintenance and reconstruction. These funds are not going to be available for new paving and the only paving that can be done with this money will be the reconstruction of existing pavements where necessary.

"The California travel into Oregon and Washington this year has been tremendous. A larger number of automobile parties have visited British Columbia and Vancouver than ever before. The mag-

Peerless Ironing Board-Table
No. 3-14

1 of 29

PEERLESS
BUILT-IN FURNITURE

conveniences. All standardized. Installed singly or in assemblies. Send for catalog of these new devices. All unusual.

SOLD BY
The HOOSIER STORE
Pacific Building, San Francisco

Los Angeles, Oakland, Portland, Seattle, Fresno, Stockton, San Jose, Long Beach, San Diego, Glendale.

nificent scenery in Oregon and the enticements of the Puget Sound country have collected thousands of dollars from California tourists. The State of Oregon, with commendable zeal, has bent every effort during the past four years to completing its section of the Pacific Highway. The Highway Department of the State of Washington is now pushing contracts on the remaining 37 miles to close gaps in their section of this road. In British Columbia the last pavement has been laid from the state line to Vancouver. The people of California and its Highway Commission could not, even if they so desired, postpone much longer the completion of California's last unit of the Pacific Highway, which will make a continuous pavement from Vancouver to Mexico.

Nurseries for Redwoods

IF, in the days of the overland stage and pony express, pioneers felling giant trees on the fringe of redwood forests, had been told they would live to see redwood nurseries by the side of sawmills, they would have flouted the statement. At that time redwood seemed to be California's one inexhaustible resource, which would continue in their might long after the mineral lodes had yielded their hidden wealth.

These old woodmen might well look on forest tree nurseries as an absurd fancy. Redwoods interlocked boughs over spaces that a man on horseback might spend weeks in traversing. They emerged from forest fires with scorched bark when pitchy firs and pines became flaming torches. Unlike other cone-bearers, the redwoods refused to succumb to saw and axe and sent forth a ring of vigorous suckers about their stumps. Such vitality would not die.

But redwood nurseries are now here. They supply evidence of a new spirit in America—a realization that the country has been playing the wanton spendthrift with its natural resources; that the present generation owes a duty to posterity; that the wasting of nature's gifts through ignorance or callousness is criminal.

The movement to replant the cut areas has been started by the redwood lumbermen—members of the California Redwood Association. They are actuated by a desire to perpetuate a valuable California industry. Deposits of oil and mineral can be exploited only once. Experiments show, however, that redwoods mature for commercial purposes at the relatively early age of 60 years; so that the soil and climate in which this unique species first found its home can continue to yield its valuable products for the use of mankind through the ages to come.

For Distinctive Hardwood Woodwork

-KOA-
HAWAIIAN MAHOGANY

A High Grade Hardwood, Medium Priced

Koa takes an elegant finish and is unusually highly figured.

When finished natural Koa shows exquisite high lights and shadows, or it can be stained as Mahogany often is. Koa comes in the same fine widths and high grade as Mahogany.

More Distinctive Than Gum

Koa can be finished in neutral tones like gum. It has, however, a more distinctive and aristocratic appearance than gum, and it is a far more durable wood. Koa improves with age.

Koa gives an aristocratic effect at a medium price.
Koa will express your individuality.

We have on hand a large stock of fine dry Koa, ready for immediate use.

WhiteBrothers

Hardwood Headquarters

NORTHERN CALIFORNIA DISTRIBUTORS

5th and Brannan Sts San Francisco

The sponsors of redwood reforestation have definitely adopted the policy of cutting in such a manner that new growths of timber will be available for felling long before the original forests are exhausted. More than half the lumber production from the redwood area now comes from land that will be reforested and permanently guarded for timber production. The redwood companies, in starting the work of reforestation, are not only fulfilling their obligations to future generations, but are placing the redwood lumber industry of California on a protected and permanent basis.

Proper Lighting of the Residence

TOO much attention cannot be paid to the proper lighting equipment of the home. Lighting is a very effective medium of making the home comfortable, and builders should impress this fact on their customers at every possible turn.

A well-lighted and wired home is a much easier proposition to sell than one that is inadequately wired. There is a little more to the subject than just mere installing incandescent lamps and chandeliers. The builder should direct house owners' attention to the expressiveness of light and to the effect proper lighting will have upon the mood or expression of the home.

Too much attention has probably been paid to the fixtures themselves rather than to the more important lighting effect that they produce. The decorator does not sell paint and wall paper as articles, but uses them to secure effects, and so the builder should do with his chandeliers and other lighting equipment.

Fixtures are, of course, primarily important, as they are visible, and therefore should be of pleasing appearance and appropriate to the architecture of the house. But it is even more important that the light sources should be properly shaded so that the light will be sufficiently diffused so that the householder will have the full benefit of the charm of perfect light without glare.

The living room can be lighted with ceiling fixtures, portable lamps, or both. Among the ceiling fixtures suitable for lighting the living room are the shower and the bowl.

The shower should be equipped with shades of good diffusing material and of sufficient depth to afford a good eye protection. It should not be less than seventy-five inches from the floor.

Bowls should also be of good diffusing glass and of sufficient size to insure low brightness. No bowl should be set less than seventy-five inches above the floor. Wall brackets should be equipped with shades or shields when they are principally for secondary illumination. Of course, when center chandeliers are not used, the lights from side brackets are more intense.

In the dining room, the table should be the more intensely illuminated. Walls, ceiling and the faces of those seated at the table are to be illuminated to a lesser degree. Many fixtures especially suitable for the dining room are the dome, low hung shaded shower, shaded candelabra, and the combination shade and shower.

Where a dome is used it should be of such shape so there is at least twenty-four inches clearance between the bottom of the dome and the table top. How much higher is proper will depend upon the shape of the dome itself. A little experimenting will determine the right height. It should be so that it will conceal the light source from the eyes of persons seated at the table.

The low hung shower should be set at about the same height as the dome. There is little in favor of wall brackets as ordinarily used in dining rooms. It is better to use torcheres provided with small lamps so as not to detract from the main illumination at the table.

In the kitchen a diffusing glass shade over a ceiling outlet is perhaps one of the best forms for kitchen illumination. Do not overlook the fact of having lights over sink, table, range and wash tubs, wherever they are located, whether in kitchen or separate laundry.

In the bedrooms, center fixtures and side brackets can be used to advantage. Shaded wall brackets should be located about six feet above the floor, and it is well to locate these on either side of the dresser spaces. This, of course, is in addition to the various outlets for portable fixtures.—Building Age.

School and Theater Equipment
Drop Curtains, Draperies
Specializing in Furnishings for Hotels, Lodges, Clubs, Steamships, Apartment Houses.
Estimates Furnished
567 HOWARD STREET, SAN FRANCISCO, CALIF.
Telephone Doug. 3161

H.RUMPF
CONTRACTING DECORATOR
CUSTOM BUILT FURNITURE
DRAPERIES AND FURNISHINGS

400 Hauser Casement Windows

used in the Beck Apartments, Powell, between Pine and Bush streets, San Francisco.

Specified by Architect M. V. Politeo

DURABLE, EFFICIENT
ECONOMICAL

HAUSER WINDOW CO.
Factory, Office and Show Rooms:
1362 Harrison St., San Francisco
Phone Hemlock 1062

STANLEY GARAGE HARDWARE

14 Reasons for your Specification of "The BEST Glass"

THE answer of the architect to the ever-increasing demand for more light in the home, school and office building is a provision for more windows and better window glass. Here are fourteen reasons why our window glass is not only better glass, but "The Best Glass."

1. Our melting furnaces are the largest in the world and produce uniformly melted batch.
2. Our improved mechanical process of drawing and blowing gives our glass greater tensile strength and higher modulus of rupture than any other window glass, plate glass, or rolled glass.
3. Our latest improvements in our blowing machines enable us to produce absolutely perfect cylinders, which makes it possible to secure the best flattening ever obtained.
4. Our new method of flattening gives our glass a wonderfully even surface, preserving meanwhile the brilliant lustre of the drawing process.
5. Our glass has less wave than other glass, and consequently shows less distortion.
6. Our glass is uniformly flat; it contains no reverse curves.
7. Our glass is uniform in thickness.
8. Our glass is perfectly annealed and therefore does not break as easily as poorly annealed glass.
9. Our glass is washed and thoroughly cleaned in an acid bath, which prevents discoloration and permits ready detection of defects.
10. Our glass cuts perfectly on both sides.
11. Our glass is graded to the highest standard of quality.
12. Our grading is the recognized standard for the United States, and is higher than the foreign standards.
13. Our glass does not break in shipment, on account of the uniformity of flatness, well-made boxes, great care in packing, and skillful loading.
14. Our entire process is conducted on scientific principles.

Our elliptical trade-mark together with the grade markings stenciled on every box of the genuine guarantee the quality. Specify "The Best Glass" and be assured of strength, evenness and beauty.

AMERICAN WINDOW GLASS CO.
GENERAL OFFICES PITTSBURGH, PA. The BEST Glass BRANCHES IN PRINCIPAL CITIES

Yards:
Tracy - Brentwood
Patterson - Newman
California

Phones:
Kearny 2073 - 2074

SANTA FE LUMBER CO.

A. J. RUSSELL, Mgr.

Wholesale and Retail

POLES AND PILING
OIL RIG AND SHIP TIMBERS
SAGINAW SPECIAL SHINGLES

LUMBER

FENCE POSTS
SIMPLEX SILOS
PAPEC ENSILAGE CUTTERS

16 California Street — San Francisco, Calif.

from tree to consumer

Pine and Redwood Lumber

SASH DOORS AND MILL WORK

SUNSET LUMBER COMPANY

MANUFACTURERS — WHOLESALE AND RETAIL

Main Office and Yards:

FIRST AND OAK STREETS, OAKLAND — Phone Oakland 1820

POPE & TALBOT

Manufacturers, Exporters and Dealers in

Lumber, Timber, Piles, Spars, Etc.

Office, Yards and Planing Mills
859-869 THIRD STREET, SAN FRANCISCO, CAL.

Mills: Port Gamble, Port Ludlow and Utsalady, Washington

Furnaces

AGENTS FOR
FRONT RANK All Steel Warm Air Furnaces
AND THE OLD RELIABLE
THATCHER Cast Iron Warm Air Furnaces

REGISTERS — FURNACE FITTINGS — REPAIRS

Montague Range and Furnace Company

327-329 JESSIE STREET — Phone Garfield 1422 — 826-830 MISSION STREET

SAN FRANCISCO, CALIF.

When writing to Advertisers please mention this magazine.

Detail of Residence, New York City. Kenneth Murchison, Architect

AN effective treatment of the city house. Economical, too, for standard-sized face brick are used throughout. In "Architectural Details in Brickwork" you will find many examples of artistic brickwork in which only standard brick are used. The half-tone plates, issued in three series, each in an enclosed folder ready for filing, will be sent to any architect requesting them on his office stationery. Address, American Face Brick Association, 1759 Peoples Life Bldg., Chicago, Ill.

Builders

ARE you in the market for WIRE NAILS?

It will pay you to submit your specifications to us.

We are carrying a large warehouse stock and can quote for mill shipment.

Inquiries will receive prompt attention

EDW. L. SOULE' CO.
RIALTO BUILDING
SAN FRANCISCO

What Does It Mean to You

—when a manufacturer trade marks his product?

It means this—

He is maintaining **QUALITY** standards—standing squarely behind his products—protecting you and himself from inferior merchandise.

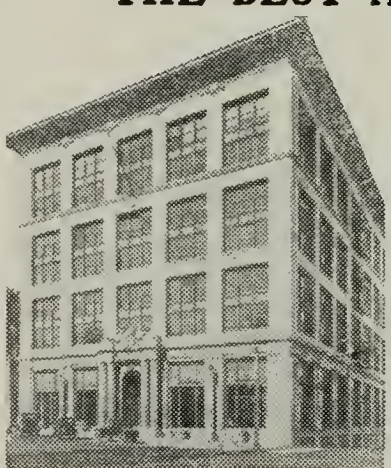
When specifying hardwood, say

"BATAAN" MAHOGANY

Lumber, Veneers, Plywood Panel
Hardwood Flooring

CADWALLADER-GIBSON COMPANY
5th and Brannan Streets
San Francisco, Calif.
Phones Douglas 1737-8

THE BEST ARGUMENT FOR ANY BUILDING



A fine building that hasn't the right kind of a heating boiler is like the giant of a man who puts up a healthy front and has a weak heart. Such a building, with all its frills, is'nt worth much to the occupants, hence it *can't* be worth much to the owner.

THE DON LEE BLDG.,
San Francisco, is equipped with
KEWANEE BOILER
AND KEWANEE GARBAGE BURNER
both burning oil with high efficiency

LOW PRESSURE HEATING BOILERS HIGH PRESSURE POWER BOILERS

KEWANEE BOILER COMPANY

San Francisco: 216 Pine Street Los Angeles: 420 East 3rd Street

Present Cost of Building Materials

THESE quotations are based on reliable information furnished by the San Francisco material houses. Date of quotations, September 20, 1923.
All prices f. o. b. cars San Francisco or Oakland For country work add freight and cartage to prices given.

Bond—1½% amount of contract.

Brickwork—
Common, $36.00 per 1000 laid.
Face, $80.00 per 1000 laid.
Enamel, $150.00 per 1000 laid.
Common, f. o. b. cars, $15.50, plus cartage.
Face, f. o. b. cars, $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (Delivered to building in carload lots.)

12x12x3 in.	$102.00 per M
12x12x4 in.	115.00 per M
12x12x6 in.	160.00 per M
12x12x8 in.	165.00 per M

Hod carriers, $6.50 per day.
Bricklayers, $10.00 per day.
Lime—$2.25 per bbl.; carload, $2.15

Composition Floors—24c to 50c per sq. ft. In large quantities, 24c per sq. ft.

Composition Stucco—$1.90 to $2.10 per sq. yard (applied).

Concrete Work (material at San Francisco bunkers)—

No. 3 rock	$2.15 per yd.
No. 4 rock	2.30 per yd.
Niles pea gravel	3.50 per yd.
Niles gravel	2.35 per yd.
Niles top gravel	2.75 per yd.
City gravel	2.15 per yd.
River sand	1.75 per yd.
Delivered bank sand	1.00 per yd.

SAND

Del Monte	$1.25 to $1.50 per ton
Fan Shell Beach (Car lots, f. o. b. Lake Majella)	$2.50 to $3.00 per ton
Swedish cement	$2.85 per bbl.
Belgian cement	2.65 per bbl.
Cement (f. o. b. cars)	$3.03 per bbl.

Rebate for sacks, 10c each.

Atlas "White"	$ 9.75 per bbl.
Medusa "White"	$ 9.95 per bbl.
Forms, Labors	$30.00 per M

Wage—

Concrete workers	$5.00 per day
Cement finishers	8.50 per day
Laborers	5.00 per day

Dampproofing—
Two-coat work, 25c per yard.
Membrane waterproofing—4 layers of P. B. saturated felt, $5.25 per square.
Hot coating work, $2.00 per square.
Wage—Roofers, $8.00 per day.

Electric Wiring—$6.00 to $10.00 per outlet for conduit work (including switches).
Knob and tube average $3.00 to $5.50 per outlet.
Wage—Electricians, $8.00 per day.

Elevators—
Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in 4-story bldg., $3250; direct automatic, about $3000.

Excavation—
$1.25 per yard, if sand. Teams, $10.00 per day. Trucks, $21 to $30 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—
Ten-foot balcony, with stairs, $105.00 per balcony.

Glass—(Consult with manufacturers.)
21 ounce, 16c per square foot.
Plate, $1.10 per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. ft.
Obscure glass, 28c per square foot.
Note—Add extra for setting.
Wage—Glaziers, $8.00 per day.

Heating—
Average, $2.25 per sq. ft. of radiation, according to conditions.
Wage—Steamfitters, $9.00 per day.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.
Wage—Iron workers, bridge and structural, $9.00 per day.
Architectural iron workers, $7.00 per day.

Lumber—(Prices delivered to bldg. site)
Common, $40 per M (average).
Com'n O.P. (select, avrg.....$43.00 per M
Flooring—

1 x 6 No. 3—Form lumber	$28.00 per M
1 x 4 No. 1 flooring	75.00 per M
1 x 4 No. 2 flooring	68.00 per M
1 x 4 No. 3 flooring	53.00 per M
1 x 6 No. 2 and better flooring	68.00 per M
1¼ x 4 and 6 No. 2 flooring	70.00 per M

Slash grain—

1 x 4 No. 2 flooring	60.00 per M
1 x 4 No. 3 flooring	53.00 per M

No. 1 common run to

T. & G.	$43.00 per 1000
Lath	7.00 per 1000

Shingles—(Add cartage to prices quoted)

Redwood, No. 1	$1.25 per bdle.
Redwood, No. 2	1.10 per bdle.
Red Cedar	1.50 per bdle.

Building Paper—

1 ply per 1000 ft. roll	$6.25
2 ply per 1000 ft. roll	9.60
3 ply per 1000 ft. roll	14.55
Sash cord com. No. 7	1.25 per 100 ft.
Sash cord com. No. 8	1.40 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.30 per 100 ft.
Sash weights cast iron	60.00 Ton

Nails, $4.25 base.

Hardwood Flooring—

⅝x3¼" T & G Maple	$137 M ft.
1⅛x2¼" T & G Maple	140 M ft.
⅞x3½" Sq. Edge Maple	116 M ft.

	⅝x2¼" T&G	¾x2" T&G	⅞x2" Sq. Ed
Clr. Qtd. Oak	$179 M	$124.00 M	$156 M
Sel. Qtd. Oak	135 M	92.50 M	114 M
Clr. Pla. Oak	140 M	92.50 M	114 M
Sel. Pla. Oak	124 M	80.00 M	97 M
Clear Maple	135 M	81.00 M	
Orion	140 M	100.00 M	100 M
Bagac	130 M	90.00 M	90 M
Laying and Finishing	16c ft.	15c ft.	13c ft.

Wage—Floor layers $9.35 per day.

Millwork—
O. P., $100 and up per 1000. R. W., $120 and up per 1000.
Double hung box window frames, average) with trim, $8.00 and up, each.
Doors, including trim (single panel), $10.50 and up, each.
Doors, including trim (five panel), $8.50 each.
Screen doors, $3.50 each.
Cases for kitchen pantries seven feet high, per lineal foot, $7.50 each.
Dining room cases, $8.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average) $16 per m.
For smaller work, average, $28.00 to $35.00 per 1000.
Wage—Carpenters, $8.00 per day.
Laborers—$5.00 per day.

Marble—(Not set), add 40c to 60c per ft. for setting.

Columbia	$1.60 sq. ft.
Alaska	1.60 sq. ft.
San Saba	3.15 sq. ft.
Tennessee	2.00 sq. ft.
Verde Antique	3.75 sq. ft.
Westfield Green	3.50 sq. ft.

Wages—Marble setters, $8.00 per day; helpers, $5.50 per day. Marble polishers and finishers, $6.00 per day.

Painting—

Two-coat work	30c per yard
Three-coat work	45c per yard
Whitewashing	5c per yard
Cold water painting	9c per yard

Turpentine, $1.68 per gal. in cases and $1.53 per gal. in tanks.
Raw Linseed Oil...$1.35 per gal. in bbls.
Boiled Linseed Oil..$1.37 per gal. in bbls.
Pioneer white and red lead, 12½c lb. in one-ton purchases; 14½c lb. for less than 500 lbs.
Wage—Painters, $8.00 per day.
Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.50 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Pipe Casings—14" (average), $7.50 each.

Plastering—
Interior, on wood lath, 65c per yard.
Interior, on metal lath, $1.25 per yard.
Exterior, on brick or concrete, $1.30 per yard.
Portland White, $1.75.
Interior on brick or terra cotta, 60c to 70c per yard.
Exterior, on metal lath, $1.85 to $2.25 per yard.
Wood lath, $7.00 a yard per 1000.
Metal studding, $1.25 to $1.50 per yard.
Suspended ceiling and walls (metal furring, lathing and plastering), $2.00 per yard.
Galv. metal lath, 33c and up per yard, according to gauge and weight.
Lime, f. o. b. S. F. warehouse, $2.50 bbl.
Lime, bulk, per ton of 2000 lbs., $19.50
Hardwall plaster, $15.40 per ton, f. o. b. warehouse. (Rebate on sacks, 15c.)
Finishing plaster (carload lots), $19.00.
Hydrate of lime, $19.50 per ton, f. o. b. warehouse.
Wage—Plasterers, $10.00 per day.
Lathers, $8.00 per day.
Hod carriers, $7.00 per day.

Plumbing—
From $70.00 per fixture up, according to grade, quantity and runs.
Wage—Plumbers, $9.00 per day.

Reinforcing Steel—
Base price for car load lots, $3.80 per 100 lbs., f. o. b. cars on docks.
Average cost to install, $25 per ton.
Wage—Housesmiths, $8.00 per day.

Roofing—
Five-ply tar and gravel, $6.25 per square for 30 squares or over.
Less than 30 squares, $6.50 per square.
Tile, $35.00 to $50.00 per square.
Redwood Shingles, $12.00 per square in place.
Cedar Shingles, $12.00 per sq. in place.
Reinf'd Pabco, 7 yr. roof, $7.50 per sq.
Reinf'd Pabco, 10 yr. roof, $10.25 per sq.
Reinf'd Pahco, 20 yr. roof, $13.50 per sq.
Recoat, with Gravel, $3.00 per square.
Wage—Roofers, $8.00 per day.

Sheet Metal—
Windows—Metal, $2.00 a square foot.
Fire doors, (average), including hardware, $2.30 per sq. ft.

Skylights—
Copper $1.25 a square foot (not glazed)
Galvanized iron, 35c a square foot (not glazed).
Wage—Sheet metal workers, $8.50 per day.

Stone—
Granite, average $8.00 sq. ft. in place.
Sandstone, average $5.50 sq.ft. in place.
Indiana Limestone, $4.25 per sq. ft. in place.
Wage—Stone cutters, $8.00 per day.
Stone setters, $8.50 per day.

Store Fronts—
Copper sash bars for store fronts, corner, center and around sides, will average 85c per lin. ft.
Note—Consult with agents.

Structural Steel—$117 per ton (erected).
This quotation is an average for comparatively small quantities.
Light truss work higher; plain beam and column work in large quantities, less.
Cost of steel for average building (erected), $115 per ton.

Steel Sash—
All makes, from S. F. stock, 26c to 34c per sq. ft.
All makes, plant shipment, 28c to 34c per sq. ft.
(Includes mullions and hardware.)

Tile—White glazed, 80c per foot.
White floor, 80c per foot.
Colored floor tile, $1.00 per foot.
Promenade tile, $1.00 per sq. ft. laid.
Wage—Tilesetters, $8.50 per day.

SERVICE

TESTING
INSPECTION
CONSULTATION
PRODUCTION

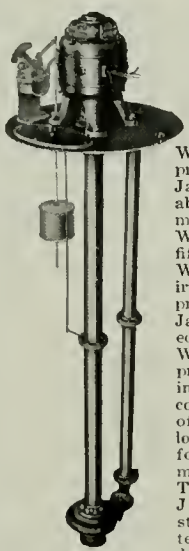
Structural and Engineering Materials

ROBERT W. HUNT CO.

ENGINEERS

Chemical and Physical Testing Laboratories

New York Chicago Pittsburgh
St. Louis San Francisco Mexico City
London Montreal



Pump Questions You Have Asked and the Answer

Why has the volume of production of Byron Jackson Pumps kept abreast of the development of irrigation in the West during the past fifty years?
Why have the largest irrigation and industrial projects selected Byron Jackson units as standard equipment?
Why have Byron Jackson pumps found their way into foreign fields, overcoming the disadvantages of freights, tariffs and lower production costs of foreign and inferior makes?
The answer is that Byron Jackson pumps have stood the three great tests of time—efficiency, durability and service.

Byron Jackson Pump Mfg. Co., Inc.

Wherever water is to be lifted

Sharon Building, San Francisco
Salt Lake City, Los Angeles, Visalia, Portland, Ore.

DAVID E. KENNEDY

Incorporated

Established 1899

CORK TILE FLOORS
EVERLASTIC TILE FLOORS
RUBBER-MARBLE FLOORS
INTERLOCKING RUBBER TILE
KENCOR BULLETIN BOARDS

San Francisco
Sharon Bldg.

Los Angeles
Story Bldg.

CORROSIRON

the acid-proof drain pipe

Make your acid drain lines permanent -:- -:-

Corrosiron drain pipe and fittings manufactured and carried in stock in San Francisco

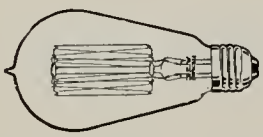
PACIFIC FOUNDRY COMPANY

Harrison and Eighteenth Streets

SAN FRANCISCO

ROBERTS MFG. CO.

Lighting Fixtures
Electric Appliances
Incandescent Lamps



WILLYS FARM LIGHTING
AND POWER PLANTS

663 Mission Street San Francisco

PERMALIGHT

FLAT MILL WHITE

A Snow White Paint in Oil, giving equal opacity of cold water paints. Can be applied with spraying machines at a small increase of cost over water paints for use in factories, warehouses, loft buildings, laundries.

Hill, Hubbell & Co.

TECHNICAL PAINTS

SAN FRANCISCO

Los Angeles Portland Seattle New York

ILLINOIS MERCHANTS BANK
Graham Anderson Probst & White, Architects

ILLINOIS MERCHANTS BANK
Chicago, Illinois
equipped with

FRINK REFLECTORS

including
BANK SCREEN REFLECTORS
COVE REFLECTORS

Our Engineering Department is co-operating with the leading architects in laying out and designing the lighting of prominent buildings throughout the country. We hope we can be of service to you.

"Specify Frink Reflectors"

I.P.FRINK, Inc.

SAN FRANCISCO, CAL.,
77 O'Farrell Street
24th Street and 10th Avenue,
New York

Chicago, Ill.
Monadnock Bldg.
Boston, Mass.
161 Summer St.
Detroit, Mich.
325 State St.
Cleveland, Ohio
992 The Arcade
Buffalo, N. Y.
310 Mutual Life Bldg.
St. Louis, Mo.
1415 Pine Street
Seattle, Wash.
609 Seaboard Bldg.
Philadelphia, Pa.
Franklin Trust Bldg.
Cincinnati, Ohio
601 Second Nat'l. Bank Bldg.
Louiaville, Ky.
415 West Main St.
Birmingham, Ala.
426 Jefferson Co. Bank Bldg.
Atlanta, Ga.
1526 Candler Bldg.

Canada
Associated with Robert Mitchell Co. Ltd.
64 Belair Avenue, Montreal

3 Big Advantages with BENJAMIN Glassteel Diffusers

1

Rugged and Easy to Clean

The distinguishing feature of the Benjamin Glassteel Diffuser is the Type R R Threaded Hood which makes an unusually strong mounting. The reflector and hood, being easily separable, make it easy to remove the reflector for frequent and thorough cleaning.

2

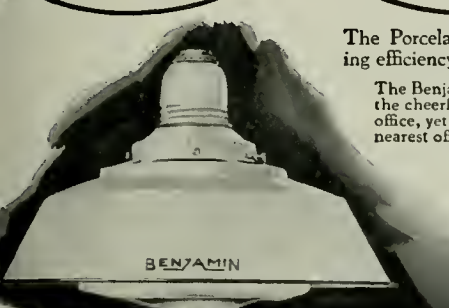
Utility

Sufficient light is directed above the reflector to illuminate the ceiling and the upper part of the walls. This cuts down sharp contrasts and provides a proper blending of illumination on and above the working plane.

3

Efficiency

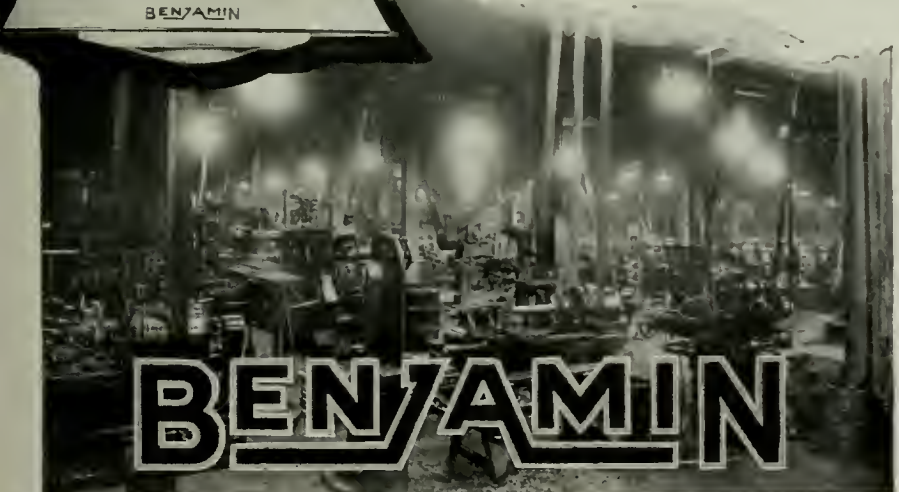
While the total illumination is high, the apparent brilliancy is greatly reduced—the reflection and diffusion are favorable to the use of the daylight lamps, and there is neither direct nor reflected glare.



The Porcelain Enamel Reflector in addition to increasing the lighting efficiency protects the Glass Diffusing Globe.

The Benjamin Glassteel Diffuser is unusually handsome. It adds greatly to the cheerfulness of the room wherein it is used. Handsome enough for the office, yet rugged enough for the factory and suitable for both. Write our nearest office for full information.

BENJAMIN ELECTRIC MFG. CO.
847 W. Jackson Blvd., Chicago
247 W. 17th Street, New York
580 Howard Street, San Francisco
Toronto and London



MATCHES IN BEAUTY AND FINISH THE FINEST FURNISHINGS

This beautiful square tube "California" Wall Bed in either walnut or mahogany finish hung on a "California" Secret Installation door is the latest in design and finish of wall bed construction. The "California" Secret Installation solves the problem of having too many doors and windows and at the same time conforms to the most modern ideas in wall decoration.

Write for Complete Data and Specifications

CALIFORNIA WALL BED COMPANY

714 Market Street, San Francisco

165 Thirteenth Street, Oakland 1040 S. Broadway, Los Angeles

Pacific Mutual Life Insurance Building, Los Angeles, Cal.
Wm. J. Dodd and Frank Richards, Architects

ORIGINATORS of SASH CHAINS

Made in "Giant Metal," "Red Metal" and Steel

28,000 feet of our No. 2 Red Metal Sash Chain used in this Building.

By specifying our Chain, the architect assures his client the best in service and quality.

Send for Sash Chain Catalog A1. See Page 1191, Sweet's Catalog.

THE SMITH AND EGGE MFG. COMPANY

BRIDGEPORT, CONN.
Over 40 Years Sash Chain Manufacturers

RAWLINS & SMITH 604 Mission Street, San Francisco
618 American Bank Bldg., Los Angeles COAST AGENTS

Leonard Starks, *Architect* Geo. D. Hudnutt, Inc., *Builder*

BUILDING FOR

FRESNO BEE

FACED WITH

Cannon Face Brick

CANNON & CO.

Manufacturers of

FACE BRICK, FLOOR TILE AND
DENISON INTERLOCKING TILE

Office and Plant: 12th St. and S. P. Ry., Sacramento
Exhibit: 77 O'Farrell Street, San Francisco, California

Helpful Reference Data for Your Files

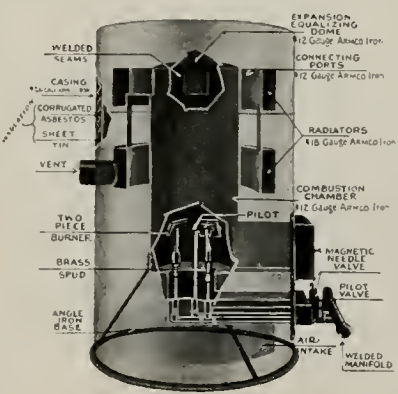
This unusual detail folio covers practically every elevator door installation problem. It makes complete facts instantly available in technical form for plans, specifications and detail drawings. Many architects now save time and labor by making blue prints direct from these drawings. Write Department "EE" for a complimentary copy and particulars of

"IDEAL"
Elevator Door Hardware

Richards-Wilcox Mfg. Co.
A Hanger for any Door that Slides
AURORA, ILLINOIS, U.S.A.
Minneapolis Chicago New York Cleveland Los Angeles
Philadelphia Boston St. Louis Indianapolis San Francisco
RICHARDS-WILCOX CANADIAN CO. Ltd.
Winnipeg LONDON, ONT. Montreal

San Francisco Office: 525 Market Street

The Electrically Controlled--Gas Fired
McLAUGHLIN FURNACE



burns gas within a Welded Armco Iron Combustion Chamber.

The "Double Radiator" extracts 88% of B. T. U. input, reducing flue gas temperatures from 400 deg. to 300 deg. F. (Smith, Emery & Co. test).

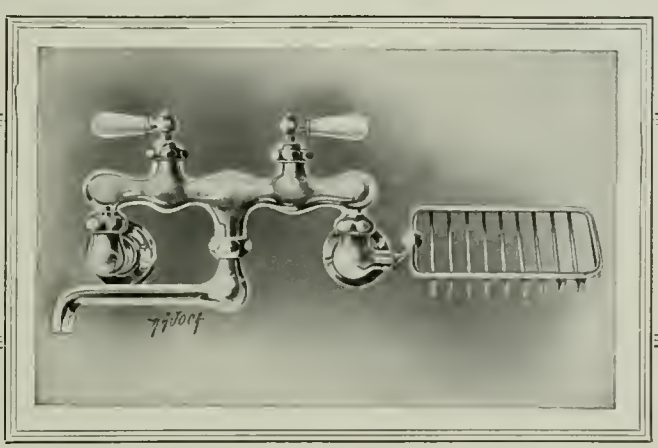
Each of the **Three Separate Burners** is controlled by Magnetic Valves and always consume a constant quantity of gas.

Write for Information

McLAUGHLIN METAL WORKS
223 J Street, Sacramento, Calif.

San Francisco W. P. Goss	Stockton Willard Hardware Co.	Fresno Evans Heating Co.	Chico Hall Metal Works

A faucet that will deliver hot, mixed or cold water :: ::



Installed in the kitchen sink, this popular Quaker fixture supplants the customary two separate faucets, and provides a convenient place for soap.

It lightens work
and saves time

HAINES, JONES & CADBURY COMPANY · HAJOCA · TRADE MARK · PHILADELPHIA

HAINES, JONES & CADBURY CO.
MAKERS OF PLUMBING SUPPLIES
857-859 FOLSOM STREET, SAN FRANCISCO
PHILADELPHIA-NEW YORK-RICHMOND, VA.-SAVANNAH
JACKSONVILLE-CHARLOTTE

When writing to Advertisers please mention this magazine.

The Ornamentation on the Vase and Plaque was
SAND BLASTED *with*

FAN SHELL BEACH SAND

ONE OF THE WHITE SANDS SHIPPED BY

DEL MONTE PROPERTIES COMPANY

Phone Sutter 6130 401 CROCKER BUILDING San Francisco

The Petrium Sanitary Sink

Makes Kitchen Work Quieter

Because of the elasticity of the composition of its surface The Petrium Sanitary Sink reduces breakage and the jarring, rattle and clatter of dishes on the drainboards to a minimum.

Architects, your principals will welcome your specification of the Petrium.

This is one of the many advantages that commend the Petrium to discriminating housewives.

PETRIUM SANITARY SINK CO.

FIFTH AND PAGE STREETS, BERKELEY, CALIFORNIA

The Petrium Sanitary Sink is displayed at the factory; Building Materials' Exhibits, Oakland and San Francisco; by our San Francisco distributors, M. E. Hammond, Hoosier Cabinet Store and by local representatives in the outside territory.

ES
PRODUCTS

ES ELEVATOR SIGNAL ACCESSORIES

ES NIGHT SERVICE ANNUNCIATORS
All Complete Signal Systems should have these for Sunday and holiday service.

ES MECHANICAL INDICATORS
Should always be used at ground floor and are recommended for upper floors when Waiting Passenger Signal Lanterns are not used.

ES STARTER'S CALL BACK
Provides a means of communication between the Starter and the Operators.

ES ELECTRIC POSITION INDICATOR
Keeps the Starter advised of the position of each elevator.

ES TELLTALE ANNUNCIATOR
Advises the Starter on which floors passengers are waiting for elevators.

See Sweet's Architectural Catalog and exhibit at Architects' Samples Corporation (N. Y. C.)

ELEVATOR SUPPLIES COMPANY, INC.

Main Office and Works: HOBOKEN, NEW JERSEY

Branch Offices
CLEVELAND, 1039 Walnut Avenue
CHICAGO, 111 S. Jefferson Street
SAN FRANCISCO, 186 Fifth Street
PHILADELPHIA, 1714 Ludlow Street
ST. LOUIS, Railway Exchange Bldg.

House at Cornwall-on-Hudson, N. Y. Finished with Old Virginia White. Rogers & Zogbaum, Architects, New York

Cabot's
Old Virginia White

A Soft, Brilliant White for Shingles, Siding and Similar Woodwork. As Bright and Clean as New Whitewash, and as lasting as Paint.

Architects and others have tried for years to get a paint that would give the same beautiful, brilliant white as new whitewash, and would also be durable and clean and not rub off like whitewash. But paint was always "painty"—hard, cold and heavy. Old Virginia White is a shingle-stain compound that has solved the problem. It is as clean, cool and brilliant as fresh whitewash, and as lasting as paint; but it is not messy like whitewash, nor painty like paint, although it costs less and goes farther than paint.

Send for Sample Shingle and Circular showing other fine houses finished with Old Virginia White

SAMUEL CABOT, Inc., Mfg. Chemists, Boston, Mass.

Cabot's Creosote Stains, Stucco and Brick Stains, "Quilt," Mortar Colors, Dampproofing, Waterproofing, Conservo Wood Preservative, etc.

Pacific Materials Co., San Francisco
Waterhouse-Wilcox Pacific Co., Los Angeles
Theo. F. Snyder, San Diego, Cal.
S. W. R. Dally, Seattle
Cress & Co., Portland
H. G. Lanahan & Co., Spokane, Wash.

MARBLE

Finished and Installed

EXTERIOR

INTERIOR

GOOD FOR ALL TIME · VERMONT MARBLE

VERMONT MARBLE COMPANY

244 Brannan St., San Francisco
Phone Kearny 3470

East End 11th St. Bridge, Tacoma

Cast Iron Stairs and Store Fronts

Bank and Office Railings, Elevator Enclosures and Fire Escapes

C. J. HILLARD & CO., Inc.

Nineteenth and Minnesota Streets

Telephone Mission 1763

SAN FRANCISCO, CALIF.

DEPENDABILITY

"Since 1858"

LINOLEUMS

WINDOW SHADES

Carpets
Draperies
Rugs

Estimates furnished

D. N. & E.

Walter & Co.

562-572 Mission Street
SAN FRANCISCO

Los Angeles Portland Seattle

Sacramento County Court House, Sacramento, Cal.

Specify

COLUMBIA MARBLE

Samples and complete information relative to the use of Columbia Marble sent upon request.

COLUMBIA MARBLE CO.

413 Rialto Building, San Francisco

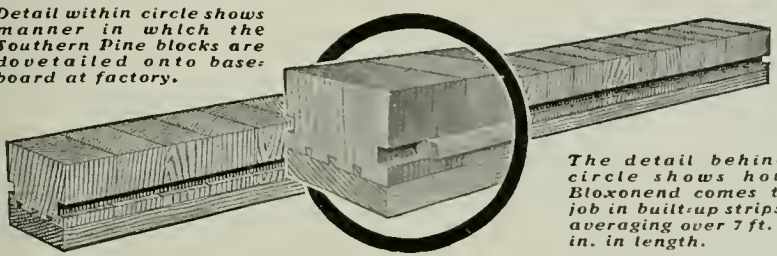
Telephone Sutter 1244

BLOXONEND

Lays Smooth **FLOORING** *Stays Smooth*

Government experts rate Southern Pine blocks on end slightly lower than granite in point of durability. Bloxonend combines the wearing qualities of loose paving blocks with the smoothness of a dressed and matched floor. Bloxonend is used by the leaders in practically every industry. It makes the ideal floor for factories, warehouses, vocational departments, and all surfaces subjected to trucking or concentrated footwear.

Detail within circle shows manner in which the Southern Pine blocks are dovetailed onto baseboard at factory.



The detail behind circle shows how Bloxonend comes to job in built-up strips, averaging over 7 ft. 6 in. in length.

Write nearest office for Architectural Specifications Today

Carter Bloxonend Flooring Co.

H. M. Holway, District Manager

San Francisco: 1007 Hobart Bldg. Portland: Chamber Com. Bldg. Los Angeles: 600 Metropolitan Bldg.

GLASS

Fuller & Goepp

Manufacturers of

Art and Leaded Glass
MIRRORS

Dealers in *Sani-Onyx* White Glass for Modern Home and Office Fixtures

32 Page Street, San Francisco
Market 498

Jackson at 11th, Oakland
Lakeside 7272

OUR OAKLAND PLANT

When writing to Advertisers please mention this magazine.

Buy This BETTER Water Heater

Better because it gives Perfect Hot Water Service—instantaneous, inexhaustible and inexpensive—not just once in a while, but all the time—
Better because it is simply made—
Better because it is solidly and ruggedly built—
Better because it is made by men whose experience dates back to 1889, when the world's first successful automatic water heater—a RUUD—was built.
EveryRUUD is equipped with an internal automatic thermostat, double fuel control, condensation sheds.

RUUD HEATER CO.
431 Sutter St. San Francisco
Phone Sutter 1640

Alvaline, Cementoline
and other
Jones-Duncan Products

MAGNER BROTHERS
PAINT MAKERS

Telephone: Market 113
414-424 Ninth St. San Francisco

HEATING-PLUMBING

COMPLETE PLUMBING AND HEATING SYSTEMS INSTALLED IN ALL CLASSES OF BUILDINGS — ALSO POWER PLANTS

GILLEY-SCHMID CO., Inc.
198 OTIS ST., SAN FRANCISCO
Tel. MARKET 965

THE TORMEY CO.

General
Painters

Phone Franklin
5 - 5 - 9 - 8

1042 Larkin St., San Francisco, Cal.

Phone Sutter 1414

Hunter & Hudson
ENGINEERS

Designers of Heating, Ventilating and Wiring Systems, Mechanical and Electrical Equipment of Buildings

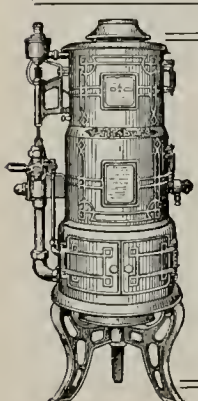
703 Rialto Bldg., San Francisco, Cal.

ELEVATOR ACCESSORIES

We manufacture and install pneumatic elevator door controls and interlocks. (A safety first equipment which has been making good for over ten years.) For information concerning elevator safety and economy we cordially invite you to call

RANDALL CONTROL AND HYDROMETRIC CORPORATION

523 Central Bldg. Los Angeles, Cal. Phone 11901
265A Minna St. San Francisco, Cal. Phone Douglas 2397



Pittsburg

It Insures
Instant
Hot Water
Service

PITTSBURG WATER HEATER COMPANY
478 Sutter S., San Francisco
Phone Sutter 5025

RUSSWIN
BUILDERS' HARDWARE

JOOST BROS., Inc.
SAN FRANCISCO AGENTS
We Carry Complete Stock:
Fishing Tackle—Guns—Mechanics' Tools—Paints—Crockery and Glassware—Stoves—Household Goods. Telephone Market 891.

NO BRANCH STORE
Mazda Lamps Electric Goods

PACIFIC MANUFACTURING COMPANY
MILL WORK, SASH AND DOORS
HARDWOOD INTERIOR TRIM A SPECIALTY
MAIN OFFICE: SANTA CLARA, CALIFORNIA
SAN FRANCISCO, 177 Stevenson Street — LOS ANGELES, 908 Washington Building
OAKLAND, 1001 Franklin Street — SAN JOSE, 16 North First Street

LARSEN-SIEGRIST CO., Inc.
BUILDING CONSTRUCTION
807 Claus Spreckels Building — SAN FRANCISCO

HEATING — PLUMBING
VENTILATION — SHEET METAL WORK
FLOOR AND WALL TILING
SCOTT CO., Inc.
243 MINNA STREET — SAN FRANCISCO

VAN EMON ELEVATOR COMPANY
PASSENGER ELEVATORS FREIGHT
1159-65 Howard Street — Market 808 — San Francisco, Calif.

Electric Wiring
Fixtures and Lighting Systems Installed
Motors Installed
A. F. WELLS CO.
Electrical and Mechanical Engineers — Contractors
155 Second St.
San Francisco, Cal.
Douglas 1820
Telephone, Buzzer, and Intercommunicating Systems
Electric Appliances
Estimates Furnished

Res. Tel. Merritt 3600
HERBERT BECKWITH
Building Construction
Formerly with ARTHUR ARLETT — Everson Building OAKLAND

JOHN M. BARTLETT
GENERAL CONTRACTOR
Office 357 - 12th ST. OAKLAND — Phone Lakeside 6750 — Res. Phone Berkeley 6884W

For Information on Public Seating *Consult*
WESTERN STATES SEATING COMPANY
39 Second Street, San Francisco — 2133 Kern Street, Fresno, Calif. — 1040 So. Broadway, Los Angeles, Calif.

When writing to Advertisers please mention this magazine.

SCHOOL AND THEATRE EQUIPMENT

FLAGG STUDIOS SAN FRANCISCO LOS ANGELES

DESIGNERS AND MANUFACTURERS

Drop Curtains, Automatic Hoists
Stage Hardware, Scenery

"Hitch Your Desires to Our Experience"

Phone Franklin 548

I. R. KISSEL

Decorator, Painter and Paperhanger

1747 SACRAMENTO ST., Bet. Polk St. and Van Ness Ave., SAN FRANCISCO

ROBERT TROST

PHONE MISSION 2209

General Building Contractor

We Specialize in High Grade Work and Employ Skilled Labor in every Branch of the Building Industry.

26th and Howard Streets
SAN FRANCISCO

Phone Sutter 1533

ALFRED H. VOGT

GENERAL CONTRACTOR CONCRETE CONSTRUCTION

185 Stevenson Street, San Francisco

LAWTON & VEZEY

CONTRACTORS AND BUILDERS

EVERSON BUILDING OAKLAND, CALIFORNIA

MONSON BROS.

Building Construction

Yard
Mariposa and Bryant Streets
Phone Market 2963

251 Kearny Street, San Francisco
Telephone Douglas 6619

JOHN A. PETERSON, President B. HEINRICH, Vice-President

SAN FRANCISCO ELEVATOR CO., Inc.

ELEVATORS

Automatic, Electric, Hydraulic, Belt Power, Automatic Dumbwaiters and Handpower Machines, Push Button Passenger Elevators a Specialty

Telephone Kearny 2443 860 FOLSOM STREET, SAN FRANCISCO

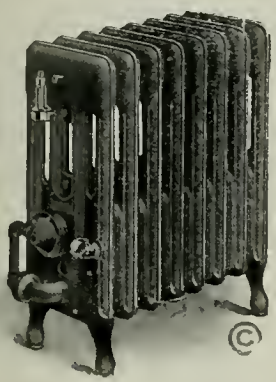
HANNAH BROS.

CONTRACTORS AND BUILDERS

142 Sansome Street, San Francisco

Members Builders Exchange Phone Douglas 1577

When writing to Advertisers please mention this magazine.



"Williams Service"

Complete Steam Heating Installation

Employing Clow Gasteam Radiators
in Apartments, Schools, Churches, Residences, Commercial Buildings
Perfect Heat — Automatic Control
No Odor — Normal Humidity

Williams Radiator Company
571 MISSION STREET
Telephone Douglas 8230 SAN FRANCISCO

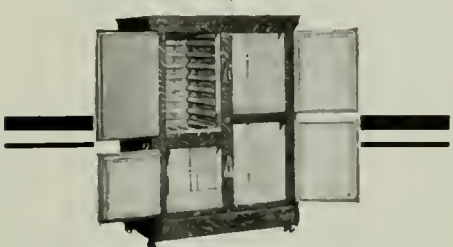
McCRAY
REFRIGERATORS *for* ALL PURPOSES

Wherever there is need for refrigeration service, in the small or large residence, hotel, hospital or institution, there is a McCray to meet that need. More than 30 years' devotion to the problems of refrigeration has made the McCray standard equipment.

Write today for the New McCray catalogs.

No. 95—for Residences
No. 64—for Markets
No. 72—for Grocers
No. 75—for Florists
No. 53—for Hotels and Institutions

McCRAY REFRIGERATOR CO.
2363 LAKE STREET
KENDALLVILLE, IND.
San Francisco Office, 765 Mission Street



For residences

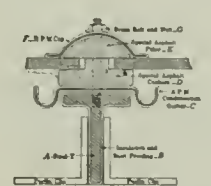
"I Didn't Know You Could Do That"

This exclamation is often heard after our representative has shown a typist how to accomplish some desired result on the

L. C. Smith & Bros. Typewriter

There are so many things about this machine that add to the quality and quantity of work of an operator that we want to tell you about them. Ask for the illustrated chart-folder, No. 601, or for the booklet, "The Silent Smith."

L. C. Smith & Bros. Typewriter Co.
Executive Offices SYRACUSE, N.Y



Robertson Adjustable SKYLIGHTS

have been developed to meet a number of conditions and requirements that architects and contractors encounter time and again in their work and are the result of seventeen years of experience in puttyless skylight construction. The glass rests directly on a cushion of special asphaltic compound. The caps, condensation gutters and aprons are made of

ROBERTSON PROCESS
ASBESTOS PROTECTED METAL

Complete data and specifications have been compiled in a very interesting manner. May we send you a copy?

H. H. ROBERTSON CO.
H. M. HOLWAY, District Manager
1007 Hobart Building, San Francisco
Metropolitan Building, Los Angeles

When writing to Advertisers please mention this magazine.

I. M. SOMMER & CO.
ENGINEERS AND GENERAL CONTRACTORS
CONCRETE CONSTRUCTION
Phone Hemlock 1100
901 BRYANT ST., SAN FRANCISCO

K. E. PARKER COMPANY, Inc.
GENERAL CONTRACTORS
Phone Sutter 5661
Room 515 Clunie Building, SAN FRANCISCO

R. W. LITTLEFIELD
Building Construction
357 12th Street, Room 9, Oakland, Cal.
Phone Lakeside 6750

H. H. HILP, Jr.
J. FRANK BARRETT
BARRETT & HILP
CONCRETE CONSTRUCTION BUILDERS GENERAL CONTRACTORS
918 HARRISON STREET, near 5th, SAN FRANCISCO
Telephone DOUGLAS 700

CAEN STONE
A refined, elegant, interior finish.
A. KNOWLES
CONTRACTOR AND PLASTERER
442 Call-Post Building
San Francisco

STEELFORMS Signify ECONOMY, RAPIDITY, and EFFICIENCY
STEELFORM CONTRACTING COMPANY
STEELFORMS FOR CONCRETE BUILDINGS
C. B. Hopkins, C. E., Manager
681 Market Street, San Francisco
CONCRETE JOIST FLOOR CONSTRUCTION

Phone Piedmont 2079W
DAVID NORDSTROM
GENERAL CONTRACTOR
4146 Emerald Street, Oakland

M. E. VUKICEVICH
SPENCER B. BAGGE
VUKICEVICH & BAGGE
GENERAL CONTRACTORS
Phone Sutter 6700
Office, Builders Exchange, 180 Jessie St., San Francisco

432 Bryant St.
SAN FRANCISCO
Douglas 2676

Standard Fence Co.
WIRE AND IRON WORKS

60th and Lowell Sts.
OAKLAND
Tel. Piedmont 646

DESIGNERS—BUILDERS
HOME AND ESTATE FENCE
AVIARY and TENNIS COURT FENCE
WIRE GRILL WORK—WIRE SCREEN
FLEXIBLE WIRE CONVEYOR BELT
WIRE SPECIALTIES
1922 Santa Fe Avenue, Los Angeles, Cal. Phone 67188

Steel Bars
FOR CONCRETE REINFORCEMENT
Cut to Length, Fabricated, Installed
Tel. Douglas 3466
BADT-FALK & CO.
346 Call-Post Bldg., 74 New Montgomery St., San Francisco

FLOWERING EUCALYPTUS
The Flaming Gum Tree of Australia (Eucalyptus Fecifolio)
A mass of flame-colored bloom through the summer months
LIMITED SUPPLY OF SMALL TREES FOR SALE FOR FALL AND SPRING PLANTING
A. K. Wallis
Telephone Berkeley 674-N 2628 Shattuck Ave. Berkeley, Calif.

PACIFIC DEPARTMENT
GLOBE INDEMNITY COMPANY
Bonds and Casualty Insurance for Contractors
FRANK M. HALL, formerly Robertson & Hall, Mgr.
444 California Street Phone Sutter 2280 SAN FRANCISCO

CARL H. PETERSON
BUILDER
PHONE DOUGLAS 1876 185 STEVENSON STREET SAN FRANCISCO

PHONE DOUGLAS 2370
R. McLERAN & CO.
GENERAL CONTRACTORS
HEARST BUILDING SAN FRANCISCO, CAL.

D. ZELINSKY & SONS
PAINTERS AND DECORATORS
165 GROVE STREET SAN FRANCISCO

SPENCER ELEVATOR COMPANY SAN FRANCISCO CAL. W WESTINGHOUSE EQUIPMENT
Passenger and Freight Elevators
For Every Service
SPENCER ELEVATOR COMPANY
166-180 Seventh Street San Francisco

When writing to Advertisers please mention this magazine.

TEMPERATURE REGULATION
JOHNSON SERVICE COMPANY

Manufacturers and Installers of JOHNSON Heat / Humidity CONTROL
For schools, residences, hospitals, banks, public buildings, also canneries and all kinds of industrial plants—Hot water tank regulators, air and water reducing valves.
Rialto Bldg., SAN FRANCISCO; 605 Van Nuys Bldg., LOS ANGELES

Atlas Heating and Ventilating Co., Inc.
ENGINEERS and CONTRACTORS
STEAM AND HOT WATER HEATING, FANS, BLOWERS
FURNACES, POWER PLANTS—SHEET METAL WORK
Phone Douglas 378 Fourth and Freelon Sts., Bet. Bryant & Brannan, SAN FRANCISCO

CLARENCE DRUCKER HERMAN LAWSON
LAWSON & DRUCKER
PLUMBING—HEATING—CONTRACTORS
450 HAYES STREET
TELEPHONE MARKET 275 SAN FRANCISCO, CAL.

H. G. NEWMAN CO.
PLUMBING HEATING
OAKLAND 3329 2004 TELEGRAPH AVENUE OAKLAND

ALEX COLEMAN
CONTRACTING PLUMBER
706 ELLIS STREET, SAN FRANCISCO Phone FRANKLIN 1006

WM. F. WILSON COMPANY
MODERN SANITARY APPLIANCES
Special Systema of Plumbing for Residences, Hotels, Schools, Colleges, Office Buildings, Etc.
Phone Sutter 357 328-330 Mason Street, San Francisco

W. H. PICARD
Plumbing, Heating, Ventilating and Power Plants
5656 College Avenue
5662 Keith Avenue
Piedmont 7522 Oakland, Calif.

CARL T. DOELL
PLUMBING HEATING
467 21st Street, Oakland, California Telephone Oakland 3524

Specify
LOWELL
Rubber Covered
WIRE

LOWELL INSULATED WIRE CO.
LOWELL, MASS.

LAMP CORDS
AND CABLE

Inspection Tag on Every Coil

PITTSBURGH
MIRRORED
REFLECTORS

For Show Windows
and
Special Lighting

GUARANTEED for 5 years
The Efficient Lighting Reflector

Best By Test

CONNECTICUT

Telephones and Annunciators

For Apartment Houses, Schools, Banks, Public Buildings, Hotels, Etc.

Have given satisfaction for the past 28 years

Let us solve your Interior Telephone Problems

Special attention given the Architects Electrical Problems.
We will gladly assist in preparation of layouts.

MYERS & SCHWARTZ

MANUFACTURERS AGENTS

90 New Montgomery Street
and
Furniture Exchange
San Francisco

1119 So. Los Angeles St.
Los Angeles
1626 Eighth Avenue
Seattle, Wash.

For the public park, school yard or children's playground.

The Haws Vitreous China Pedestal (Model 12) Sanitary Drinking Fountain

Haws Sanitary Drinking Faucet Co.
1808 Harmon Street, Berkeley

RETARDO

— preserves the surface
— protects against fire
— beautifies

RETARDO is manufactured in all colors and for all purposes. It is endorsed and recommended by Fire Departments and Fire Prevention Bureaus. RETARDO costs no more than ordinary paint, but does more work.

Send for color chart and further information

Fire Retardent Products Co.
2838 Hannah Street Oakland, Calif.

FIRE PREVENTATIVE PAINT

ACORN HARDWOOD FLOORS

Guarantee complete floor satisfaction by specifying

"Acorn Brand" Oak Flooring

Architects and contractors are proving this by actual practice.

Strable Hardwood Co.
HARDWOOD LUMBER
511-545 First St., Oakland, Calif.
Phone Oakland 245

Formal Garden Effects may be obtained on your Country Estate within a period of two to three years.

MacRORIE-McLAREN CO.
LANDSCAPE ENGINEERS
and General Nurserymen
514-16 Phelan Bldg., San Francisco
Nurseries at Beresford

Sutter 4998

TOKHEIM

OIL TANK & PUMP CO.

Factory Branch
806 Sharon Building,
55 New Montgomery Street
San Francisco

Specify

TRADE MINWAX MARK

Brick and Cement Coating
for Exterior
Brick and Plastered Walls

A permanent coating that is absolutely waterproof and positively will not flake, peel or craze.

Waterproof your buildings while they are dry

Send for Booklet on Products, Data and Specifications

MINWAX CO., INC.

K. M. HAYDEN
22 Battery St.
San Francisco

W. C. LEA
653 So. Clarence St.
Los Angeles

Country and City Homes

SOME NOTABLE EXAMPLES IN ENGLISH TUDOR, SPANISH AND COLONIAL BY

ALBERT FARR, *Architect*

The University of California Stadium

A SERIES OF INTERESTING PROGRESS PHOTOGRAPHS

The Architect and Engineer
For October, 1923

When writing to Advertisers please mention this magazine.

S. & S. TILE CO.

MANUFACTURERS OF
HAND-MADE TILES FOR WALLS AND FLOORS. REPRODUCTIONS OF OLD SPANISH AND MOORISH GLAZED TILES
Factory, 4th and Carrie Sts. San Jose, Cal.

JAS. I. KRUEGER

Representing
Illinois Engineering Company, Chicago
Eureka Brass Works, Cincinnati
Manufacturers of
Vacuum and Vapor Steam Heating Materials, Power Plant Equipment
Standard Radiator and Gate Valves, Pumps for Vacuum Systems of Heating
557-559 Pacific Building, San Francisco Telephone Sutter 7057

CHARLES T. PHILLIPS COMPANY

CONSULTING ENGINEERS
HEATING, VENTILATING, ELECTRIC WIRING, PLUMBING
Roberts Building, Los Angeles

CYCLOPS IRON WORKS

ICE MAKING and REFRIGERATING MACHINERY, TRAVELING CRANES
Office and Works: 837-847 FOLSOM ST. SAN FRANCISCO, CAL. Telephone: SUTTER 3030

GRINNELL AUTOMATIC SPRINKLER

GRINNELL COMPANY
OF THE PACIFIC
VALVES PIPE and FITTINGS
ENGINEERS AND CONTRACTORS
453 Mission Street, San Francisco
CHEMICAL FIRE EXTINGUISHERS and FIRE ENGINES

Fire Protection Engineering Company

ENGINEERS AND CONTRACTORS
Automatic Sprinkler Systems
Automatic Fire Alarm Systems
Watchman Detector Systems
Executive Offices and Factory
67 MAIN STREET
San Francisco, California
Chemical Engines
Hand Fire Extinguishers
Motor Driven Fire Apparatus

CLINTON CONSTRUCTION COMPANY

of California
BUILDERS AND MANAGERS OF CONSTRUCTION
923 Folsom Street San Francisco

RADIATOR AIR VALVES

Traps, Rapid Riser Vents, Vacuum and Condensation Pumps
They Are Absolutely Guaranteed
JAS. P. MARSH & CO., Represented by HULTING, HURST & HULTING
Monadnock Building (Telephone Sutter 5295), San Francisco, Cal.

When writing to Advertisers please mention this magazine.

HOFFITE, the Stucco that is Not Affected by Climatic Conditions

As evidence of this fact, we invite you to write for the addresses of our experienced plastering contractors, who are located in the following cities and who keep a large stock of material for your immediate service:

California			*Oregon*	*Washington*
Eureka	Fresno	Santa Ana	Portland	Seattle
Chico	Porterville	San Diego	Salem	Tacoma
Yuba City	Visalia	Ventura	La Fayette	Aberdeen
Santa Rosa	Tulare	Santa Barbara	Dallas	Chehalis
Sacramento	Bakersfield	San Luis Obispo	Oregon City	Everett
Suisun	Los Angeles	Watsonville	Corvallis	Yakima
Napa	Long Beach	Salinas	Albany	Spokane
San Rafael	Pasadena	Monterey	Roseburg	Vancouver
Corte Madera	Glendale	Santa Cruz	Coquille	
Stockton	San Pedro	San Jose	Klamath Falls	
Modesto	Burbank	Redwood City		
Merced	Whittier	San Francisco		
Madera	Fullerton	Oakland		
San Bernardino	Alhambra	San Mateo		

Any of these contracting plasterers will be glad to show you the various houses located in their city on which HOFFITE, WATERPROOF, FIREPROOF AND UNCRACKABLE STUCCO has been applied.

Write for Booklets on HOFFITE Stucco

Also send for interesting booklet on Hoffite, the Ideal Composition Flooring

THE HOFF MAGNESITE CO.

SAN FRANCISCO

MILLER & ALF

GENERAL SALES AGENTS

337 Monadnock Bldg., San Francisco 1040 S. Broadway, Los Angeles

CALIFORNIA ARTISTIC METAL & WIRE CO.
J. T. McCORMICK, PRESIDENT
ORNAMENTAL IRON AND BRONZE
349-365 SEVENTH ST. SAN FRANCISCO

MORTENSON CONSTRUCTION CO.
CONTRACTORS FOR STRUCTURAL STEEL AND IRON
H. MORTENSON, President
Office and Shops: Corner 19th and Indiana Streets
Phone: Mission 5033 SAN FRANCISCO, CAL.

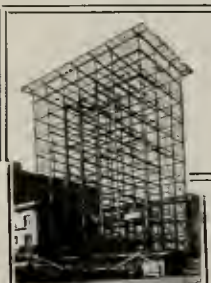
JUDSON MANUFACTURING COMPANY
Main Office:
817-821 FOLSOM STREET
Telephone Sutter 6820
SAN FRANCISCO
Structural Steel and Iron Work
Works:
OAKLAND—EMERYVILLE
CALIFORNIA
C. C. SAUTER, Chief Engineer

Federal Ornamental Iron & Bronze Co.
Bank Counter Screens and Grille Work Our Specialty
Most Modern Equipment Throughout
Recent Contracts: BANK OF ITALY, FIRST NATIONAL BANK
16th Street and San Bruno Avenue, San Francisco Phone Market 1011

HERRICK IRON WORKS
STRUCTURAL STEEL
Office and Works, 18th and Campbell Streets
Oakland, Cal. Phone Lakeside 1460

Telephone Mission 58 A. A. DEVOTO, President
CENTRAL IRON WORKS, Inc.
STRUCTURAL STEEL
Office 2050 BRYANT STREET SAN FRANCISCO, CAL.

C. F. HOFFMAN L. W. FLIEGNER
Golden Gate Iron Works
STRUCTURAL STEEL AND ORNAMENTAL IRON CONTRACTORS
Howard and 11th Streets San Francisco



SCHRADER IRON WORKS, Inc.
STRUCTURAL STEEL CONTRACTORS
Fire Escapes, Waterproof Trap Doors, Ornamental Iron Work
1247-1249 HARRISON STREET SAN FRANCISCO, CAL.
Bet. 8th and 9th Telephone Market 337

When writing to Advertisers please mention this magazine.

for beauty-

Tropico Tiles

TROPICO QUARRY TILES in red and buff shades are a distinctive and durable floor material.

TROPICO FAIENCE TILES in a variety of dull glazes and textures are the ideal materials for mantels, sun-rooms, bathrooms, and all interior and exterior decorative treatment where tiles of permanent, soft coloring are desired.

Sold by all tile dealers.

Look for the name TROPICO on your tiles.

TROPICO POTTERIES Inc.
GLENDALE – CALIFORNIA

CRANE
CAST IRON
BRASS
CAST STEEL
FERROSTEEL

FLANGED FITTINGS

We have the largest line of patterns for flanged fittings for low pressure, standard, extra heavy, hydraulic, superheated and extreme hydraulic pressures, ranging in size from one-inch to sixty-inch, and for working pressures from fifty pounds to three thousand pounds.

The dimensions of the low-pressure, standard and extra heavy fittings are in accordance with the 1915 **American Standard.**

Castings for special fittings also may be made at a minimum expense owing to our large equipment of special patterns which may be altered at very low cost.

CRANE CO.
PLUMBING SUPPLIES

2nd and Brannan Sts., SAN FRANCISCO

348 9th Street OAKLAND

Genuine Hyloplate Blackboards
Best Pennsylvania Slate Blackboards
School Furniture
Western Venetian Blinds
Lockers

C. F. WEBER & CO.

San Francisco — Reno
Los Angeles — Phoenix

The GOLD MEDAL MAIL CHUTE

INSTALLED IN
THE NEW
SAN FRANCISCO
CITY HALL
AND THE
WHITE MARBLE
MERRITT
BUILDING
LOS ANGELES

Given highest award at Panama-Pacific International Exposition 1915

Waterhouse-Wilcox Co.
California Representatives

523 MARKET Street
SAN FRANCISCO

331 E. 4TH STREET
LOS ANGELES

F. T. CROWE & CO.
Seattle, Wash.

The J. McCracken Co.
Portland, Ore.

American Mailing Device Corporation

BUTTE ELECTRIC AND MFG. CO.

PAUL BUTTE, Owner

HIGH GRADE ELECTRICAL INSTALLATIONS

FEDERAL ELECTRIC BANK PROTECTION SYSTEMS

DOUGLAS 145 534 Folsom Street San Francisco

H. S. TITTLE

CONTRACTING ELECTRICAL ENGINEER

85 COLUMBIA SQUARE, SAN FRANCISCO Phone HEMLOCK 2865

To Be "Low Bidder" Not Always Our Aim

"QUALITY AND SERVICE ALWAYS"

Our nation-wide organization and large experience in this field assure you always of fair estimates and absolute satisfaction. Electrical Appliances

F. E. NEWBERY ELECTRIC CO.

Alta Building, 381 Bush Street, San Francisco Phone Sutter 6361

San Francisco, Cal. Oakland, Cal. Los Angeles, Cal.

NE PAGE, McKENNY CO.

Electrical Engineers and Contractors

Phone Sutter 2369 589 Howard St., San Francisco, Cal.

BERKELEY ELECTRICAL COMPANY

ELECTRICAL CONTRACTORS—FIXTURES

2142 Center St. PHONE BERKELEY 8747 Berkeley, Calif.

AUTOMATIC ELECTRIC CO.

PAX—Private Automatic Telephone Exchanges. We have just installed a complete system in new Standard Oil Building. Ask for our engineer to call.

DIRECT LINE TELEPHONE CO., *Agents*

37 CALIFORNIA ST. Telephone Douglas 722 SAN FRANCISCO

Office Phone Piedmont 391

KING'S ELECTRICAL CO.

ELECTRIC WIRING

BUILDERS' EXCHANGE OAKLAND, CALIF.

Browne-Langlais Electrical Construction Co.

Agents for

ROBBINS and MYERS MOTORS, PACKARD MAZDA LAMPS

313 FIFTH STREET, SAN FRANCISCO

Telephone Douglas 976

1828—MOTT—1922

Architects and their clients are invited to visit our show rooms, 553-555 Mission St. San Francisco, D. H. Gulick, manager.

Los Angeles Office—721 Central Bldg.

MOTT COMPANY
of California

Telephone Douglas 2046 Charles Felix Butte

Butte Elec. Equipment Co.

Trade Mark BEECO Registered

ELECTRICAL
CONTRACTORS AND ENGINEERS

530 FOLSOM STREET SAN FRANCISCO

L. SIEBERT DESIGNERS AND MANUFACTURERS OF J. GENSLER

SWITCH BOARDS · PANEL BOARDS
PROTECTIVE POWER PANELS

Drendell Electrical and Mfg. Co.

DEMCO

1345-47
HOWARD STREET

SAN FRANCISCO,
CALIF.

PHONES
MARKET 1753
1754

MUELLER

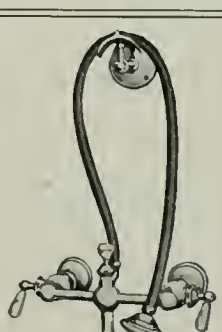
Faucets give full value in wear and service.

The MUELLER COMBINATION SINK FAUCET is especially desirable—Hot, Cold or Tempered water through spout or spray?

THE NEWEST AND BEST THING IN FAUCETS

H. MUELLER MFG. CO.

1072-76 HOWARD STREET SAN FRANCISCO, CALIF.



MILLER FOLDING IRONING BOARD

ELIMINATES WALL CABINET—IS INSTALLED IN KITCHEN CUPBOARD

NO { PLASTER GROUNDS / CASING OR PAINTING — SAVES { WALL SPACE AND LABOR / TIME AND MATERIAL

Exhibited and sold by { LANNOM BROS. MFG. CO / 362 Magnolia St., Oakland, Calif.

Send for Catalogue to { W. N. MILLER / 844 Thirteenth St., Oakland

PACIFIC ELECTRIC CLOCK CO.

J. J. Estabrook

Manufacturers and distributors of Electric Clock Systems and Time Keeping Devices for Schools, Public and Private Buildings. Plans and Specifications prepared by competent engineers without charge.

86 THIRD STREET
SAN FRANCISCO, CALIF.

A. C. SCHINDLER, President — CHAS. F. STAUFFACHER, Secretary

THE FINK & SCHINDLER CO.

Manufacturers of INTERIOR WOODWORK AND FIXTURES
BANK, OFFICE AND STORE FITTINGS
SPECIAL FURNITURE

218-228 THIRTEENTH STREET, Bet. Mission and Howard Sts. — SAN FRANCISCO, CAL. Telephone Market 474

QUALITY **ARISTO PAINTING CO.** RELIABILITY

SPRAY PAINTING

COMMERCIAL AND INDUSTRIAL PAINTERS

Phone Douglas 4779 — 39 Tehama Street, San Francisco — Roofs Repaired

ERNEST HELD, General Manager

HOME MANUFACTURING CO.

BANK, STORE AND OFFICE FITTINGS
FURNITURE AND HARDWOOD INTERIORS
CABINET WORK OF EVERY DESCRIPTION

543 and 545 BRANNAN ST. Phone Kearny 1514 San Francisco, Cal.

Mullen Manufacturing Co.

BANK, STORE AND OFICE FIXTURES—CABINET WORK OF GUARANTEED QUALITY—CHURCH SEATING

Office and Factory:
Telephone Market 8692 — 64 Rausch St., Bet. 7th and 8th Sts. San Francisco

JAMES L. McLAUGHLIN

GENERAL CONTRACTOR

Phones Douglas 6645—6646 — 251 KEARNY STREET, SAN FRANCISCO

Dolan Wrecking & Construction Co.

(D. J. DOLAN)

Lumber, Lath, Nails, Shingles, Doors, Windows and Plumbing Supplies, New and Second Hand

Phone Market 4264 — Office and Yard, 1607-1639 MARKET ST., SAN FRANCISCO

When writing to Advertisers please mention this magazine.

Fire Protection Corporation
Engineers and Contractors
FOR
Automatic
Sprinkler Systems
315 Montgomery St. San Francisco, Cal.
Phone Sutter 2993

Carey
BUILT-UP ROOFING
Pipe and Boiler Coverings
Asbestos Roofing
Elastite Expansion Joints
Carey Fibre Roof Coating
Asfaltslate Shingles
JONES BROTHERS ASBESTOS SUPPLY COMPANY, INC.
512 Second Street, San Francisco
Telephone, Garfield 156

WIRING
CONTRACTORS Co. CENTRAL ELECTRIC CO. AND DEALERS
177-179 Minna Street, San Francisco
Phone Douglas 4832

A BETTER IRON TONCAN METAL
Phone Douglas 3775
United Alloy Steel Corporation
CANTON, OHIO
Black Galvanized and Blue Annealed Sheet
WESTERN SALES OFFICES
Santa Fe Building, San Francisco
LOS ANGELES 528 Title Insurance Bldg.
PORTLAND 301 Henry Building

REMILLARD BRICK CO.
Est. 1869
Manufacturers
COMMON BRICK
332 Phelan Building
San Francisco, Calif.
Plants: San Jose, Pleasanton

The Fidelity and Casualty Company of New York
CASUALTY INSURANCE and SURETY BONDS
California Office
Balfour Building San Francisco
Assets, $27,000,000; Surplus, $7,000,000

JOHNS-MANVILLE, Inc.
of California
SERVICE TO ARCHITECTS
Architectural Acoustics and Sound-Proofing, "Colorblende" Asbestos Shingles, Asbestos Prepared Roofings, Asbestos Built-up Roofings, Mastic Industrial Flooring, Keystone Hair Insulating and Sound-Deadening.
JOHNS-MANVILLE SERVICE COVERS THE CONTINENT
JOHNS-MANVILLE, Inc.
of California
DISPLAY ROOM
500 POST STREET
San Francisco

"BLAZING" THE TRAIL
We've been doing it for many years—giving the Sportsman Better Value for Quality than he ever before received. "Value at a Fair Price" in everything for the Sportsman.
The Ellery Arms Company
583-85 MARKET ST
SAN FRANCISCO, CAL
SEND FOR CATALOG *The Sign of Quality*

OPEN HEARTH
REINFORCING STEEL BARS

Square Deformed—Immediate Shipment—Cut to required lengths

PACIFIC COAST STEEL COMPANY
Sales Office, Rialto Building SAN FRANCISCO Phone Sutter 1564

SAFETY RELIABILITY ECONOMY
The three dominant factors in specifying elevators

Pacific Elevators are always safe, and the many installations is proof of their reliability. Alternating current driven elevators are fully as satisfactory as direct current driven machines for high-speed installations, and the cost of power and upkeep is much lower.

Estimates Cheerfully Given

Pacific Elevator & Equipment Company
1129-31 HOWARD STREET SAN FRANCISCO, CALIF.
MANUFACTURERS OF A. C. & D. C. ELEVATORS—PASSENGER OR FREIGHT

A Permanent Exhibition of Architects' Samples

Universal

Visit Our Showrooms

PHONE DOUGLAS 93

MONADNOCK BUILDING
681 Market Street

Building Materials, Engineering Equipment Specialties

Exhibits

Plan to Display Your Products

SAN FRANCISCO, CALIF.

JOHN TRAYNOR CHARLES HARCOURT

OCEAN SHORE IRON WORKS

Manufacturers of
BOILERS, STEEL TANKS, STEEL PLATE SPECIALTIES

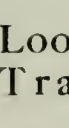
Dealers in
BOILERS, TANKS, PUMPS, ENGINES
GENERAL MACHINERY, ETC.

Office and Works:
550-558 EIGHTH STREET

Phones Market 462 and 463
SAN FRANCISCO, CAL.

When writing to Advertisers please mention this magazine.

Look for this Trademark



And if it's there don't worry any more about your Valves and Fittings

Specify and insist upon having

The Kelly & Jones Co. Valves and Fittings

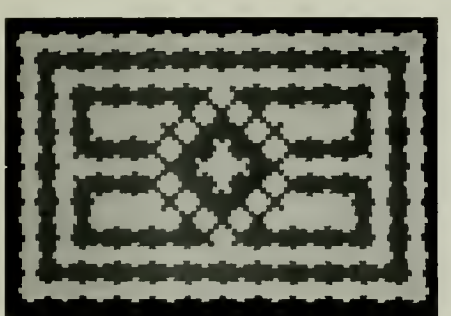
Byers Genuine Wrought Iron Pipe

Republic Steel Pipe

Complete Line of Plumbing Supplies
Large Stocks for Prompt Delivery
Catalogue on requeat

California Steam & Plumbing Supply Co.

671-679 Fifth Street, Corner Bluxome
SAN FRANCISCO CALIFORNIA



INTERLOCKING RUBBER TILING

The Elevator Floor

whether in Office Building, Hotel or Department Store, is subjected to a great deal of wear and tear.

—SPECIFY—

INTERLOCKING RUBBER TILING

and you've provided your client's building with a Durable, Economical, Practical material that is sure to give satisfaction. Twenty tons installed in the Standard Oil Building, San Francisco. Stock on hand for immediate delivery.

NEW YORK BELTING AND PACKING CO.

NEW YORK

San Francisco Branch 519 MISSION ST. Phone Douglas 1837

Small booklet of designs mailed on request

VIEW AT NILES PLANT

CRUSHED ROCK
GRAVEL
SAND

For Building and Road Construction

COAST ROCK AND GRAVEL CO.

500 Call Building SAN FRANCISCO Phone Sutter 3990

Plants at Niles, Fair Oaks, Oroville, Eliot, Piedra, Solo, and Marysville

THE WORLD'S WORD FOR ELEVATOR SAFETY

The Architect who specifies OTIS ELEVATORS may do so with the assurance that the responsibility of the Otis Elevator Company extends beyond satisfactory installation. Buildings equipped with OTIS ELEVATORS enjoy the advantage of prompt service and careful inspection rendered by over a hundred Otis offices.

OTIS ELEVATOR COMPANY

2300 STOCKTON ST. SAN FRANCISCO

OFFICES IN ALL PRINCIPAL CITIES

Beauty, Economy, Satisfaction —

THE use of RICHMOND FACE BRICK is not only a matter of adding to the beauty and permanence of a structure but is a source of lasting satisfaction.

RICHMOND FACE BRICK, figured over a period of years, is more satisfactory than many other materials regardless of price.

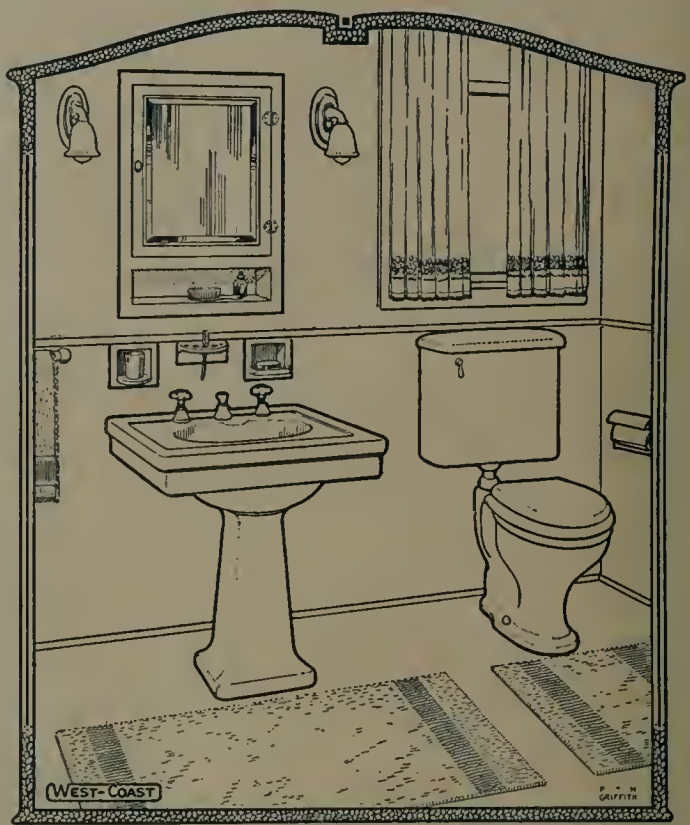
RICHMOND FACE BRICK brings to the user the satisfaction of having used the best material obtainable and the knowledge that its strength and beauty will endure through the ages.

FACE BRICK FIRE BRICK COMMON BRICK
PAVING BRICK ENAMEL BRICK
ROOFING TILE ATLAS WHITE CEMENT
HOLLOW BUILDING TILE
MANTEL AND FLOOR TILE

Richmond Pressed Brick Company
Richmond California

Los Angeles Pressed Brick Company
Los Angeles California

United Materials Company
Northern California Distributors
Sharon Building San Francisco



"West Coast" Two-Fired Vitreous China Pedestal Lavatory, Closet and Tank

Durability

"West Coast" Plumbing Fixtures are a sound investment for they are guaranteed against any defects in materials or workmanship.

Made of two-fired vitreous china, "West Coast" products are the most durable of all sanitary fixtures, and high-grade fittings assure permanent efficiency in operation.

WEST COAST Porcelain Manufacturers

Wells Fargo Building, San Francisco

Plant, Millbrae, California

SAN FRANCISCO
PUBLIC LIBRARY

The ARCHITECT & ENGINEER

OCTOBER 1923

Published in San Francisco
50 cents a copy - $2.50 a year

This label is our *guarantee* of quality

TRADE MARK REGISTERED

PACIFIC

PLUMBING FIXTURES

Pacific Sanitary Manufacturing Co.

Main Office: 67 New Montgomery St., San Francisco

Factories: Richmond and San Pablo, California

WAC

Non Leakable Roofs are assured by the use of~

FLOATINE

The improved roof asphalt that will not soften, run, leak, or slide

Specify~

PABCO

10 and 20 Year Roofs which require its use

The PARAFFINE COMPANIES, *Inc.*

A $12,000,000 Corporation Operating 17 Plants on the Pacific Coast

TRADE MARK
PABCO PRODUCTS

San Diego Los Angeles San Francisco
Oakland Portland Seattle

Residence of William Howe Phelps
N. W. Cor. Sixth and St. Andrews Sts.
Los Angeles, Cal.
Architect and Builder, Chas. D Wagner

Nothing Else So Transforms Stucco and Cement

CEMENT or stucco assumes its true beauty only after Bay State Coating has been applied.

There is nothing else like Bay State. The formula is a secret one. It is the original coating made to change drab cement or stucco to a pure, rich white, or one of many beautiful tints, and waterproof it in the same operation.

Driving rain cannot seep through a coating of Bay State. Dampness cannot get in. For this master coating finds every pore and crevice, and permanently seals it. Weather, summer or winter, has no effect upon it.

Bay State Brick and Cement Coating comes in a pure, rich white and a complete range of artistic colors.

Send for samples and booklet to-day.

WADSWORTH, HOWLAND & CO., Inc.
New York BOSTON Philadelphia

Graham Hambly & Soo, 1333 E. 7th St., Los Aogeles, Cal.
James Hambly & Son, 229 Clay St., San Fraocisco, Cal.
Jooes-Moore Paiot House, Sao Diego, Cal.
McCrackeo-Ripley Buildiog Materials Co., 45 Fourth St., Portland, Oregoo.
F. T. Crowe & Co., S08 W. Lake Ave., Seattle, Wash.

BAY STATE
Brick and Cement Coating

Lockwood, Greene & Co., Architects & Engineers, Atlanta, Ga.

Electrical Supply Co., Electrical Contractors, Charleston, S. C.

Holtzer-Cabot

HOSPITAL SIGNALING SYSTEMS

The New Citadel Hospital, Military College of South Carolina, Charleston, S. C. is another new hospital equipped with Holtzer-Cabot Signaling Systems.

Holtzer-Cabot's fifty years of leadership in the manufacture and development of Signaling Systems is a protection that the Architect & Engineer, the Hospital Management and Working Staff cannot conscientiously overlook.

This is why more and more Architects and Engineers are specifying Holtzer-Cabot Systems exclusively.

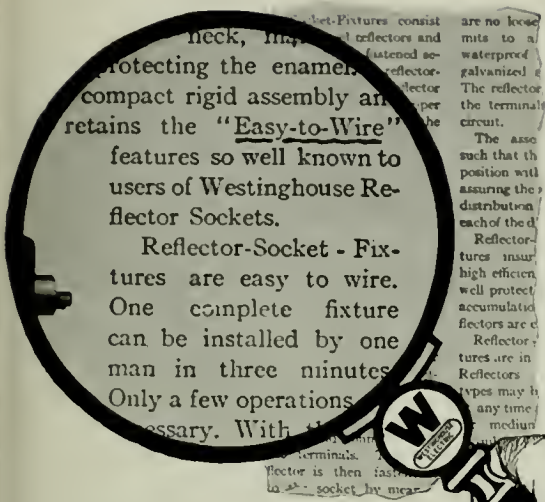
Architects, Engineers and Members of Building Boards are invited to write for brochures "Signal Systems for Hospitals" and "Signal Systems for Schools."

The Holtzer-Cabot Electric Co.

Electric Signaling Systems

Home Office and Factory:
125 ARMORY ST., BOSTON, MASS.

BRANCH OFFICES
Chicago, Ill.: 6161-65 So. State St.
New York, N. Y.: 101 Park Ave.
Philadelphia, Pa.: 807 Otis Bldg.
Detroit, Mich.: 1051 Book Bldg.
Cleveland, Ohio: 517 Union Building
Baltimore, Md.: 1104 Union Trust Bldg.
Minneapolis, Minn.: 627 Metropolitan Life Bldg.
Atlanta, Ga.: 1511 Healy Building.



IN addition to being "easy to wire," Westinghouse Reflector-Socket-Fixtures have many features that have popularized them as the ideal type of industrial lighting equipment.

Water-proof, non-corrosive, protected from accidental short circuit, reflector securely and correctly seated, easily cleaned, and interchangeable units are some of the outstanding advantages of Westinghouse Reflector-Socket-Fixtures.

Are your electrical specifications complete? Westinghouse Illuminating Engineers are prepared to co-operate with architects, engineers and contractors on lighting problems.

Literature describing the advantages of better lighting will be sent if you write to the nearest Westinghouse office or to

Westinghouse Electric & Mfg. Co.
GEORGE CUTTER WORKS South Bend, Ind.

District Offices
Denver Los Angeles San Francisco Seattle

Use Westinghouse Mazda Lamps

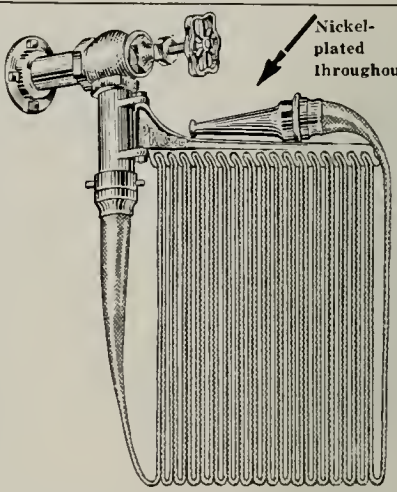
Westinghouse Reflector-Socket with Standard RLM Dome Reflector.

Westinghouse

"Standard"

THIRTY-SIX years' experience manufacturing and installing Electric Time Keeping Systems. Helpful engineering data cheerfully furnished architects, engineers and school boards insuring satisfactory results, and a direct factory branch office completely equipped to render immediate service.

The Standard Electric Time Company
461 Market St., San Francisco, Cal.
Telephone Sutter 241



PRASCO PINLESS
SWINGING HOSE RACK

For 50, 75, 100 ft. Underwriters Unlined Linen Hose

No pins to break, bend, or jam
Hose pays off one loop after the other

Plant Rubber & Asbestos Works
537 Brannan St. San Francisco Tel. Sutter 2100

"CALIFORNIA STUCCO"

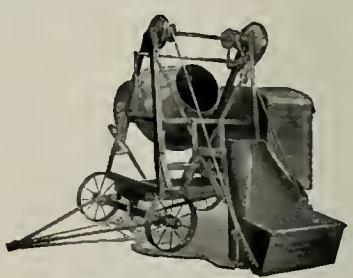
It is a finishing plaster coat made in many beautiful colors, from a true Portland Cement base, which assures everlasting qualities.

"The Stucco which is making California Architecture famous"

For Sale by All Dealers

California Stucco Products Co.
58 SUTTER STREET
1503 S. ALAMEDA ST., LOS ANGELES

JAEGER CONCRETE MIXERS



"A MIX A MINUTE"

Not a mere slogan, but an every-day performance.

Write or phone and we will mail you interesting Catalog.

EDWARD R. BACON COMPANY
INCORPORATED
CONSTRUCTION ERBCO EQUIPMENT
FOLSOM at 17TH STS., SAN FRANCISCO
Los Angeles Sacramento Fresno

The Architect and Engineer—October, 1923—Vol. LXXV, No. 1. Published monthly—$2.50 a year. 627 Foxcroft Building, San Francisco, California. Entered as second-class matter, November 2, 1905, at the Post Office at San Francisco, California, under the act of March 3, 1879.

A ROOF FOR EVERY HOUSE

This would not have happened—

if the 1500 homes in Berkeley's beautiful residence district had been roofed with **Carey Asbestos Shingles.**

The new Building Ordinance of the College City requires the use of Fireproof Roofing. Consult us before building.

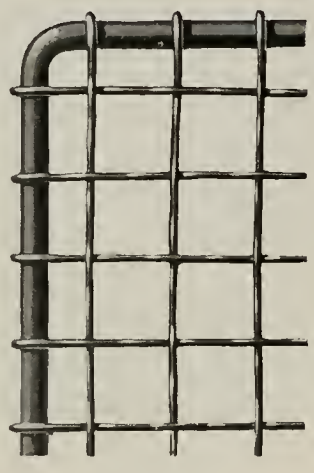
Jones Brothers Asbestos Co., Inc.
512 SECOND STREET SAN FRANCISCO

Berkeley Office: 2138 UNIVERSITY AVE., *Phone Berkeley, 2948*

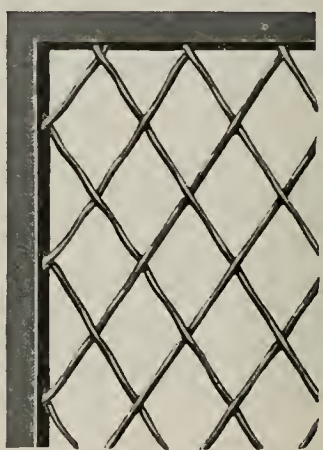
Carey
BUILT-UP ROOFING

1873 FIFTY YEARS OF PROGRESS 1923

Wire Work



SQUARE MESH
On Round Frame



DIAMOND MESH
On Channel Frame

We Manufacture Wire Work for the following purposes:

Window guards for Residences, Warehouses and Manufacturing Plants.
Overhead guards for Elevator Shafts.
Elevator Enclosures.
Freight Elevator Cars and Doors.
Skylight Covers, Vents.
Protection guards for Sidewalk Doors.
Machinery safety guards.
Auto truck Enclosures and Doors.
Locker Doors, stall guards.
Partition Screens for Offices, Garages, Warehouses, etc.
Wire signs for Buildings, etc., etc.

Write for Leaflet

Michel & Pfeffer
Iron Works
HARRISON AND TENTH STREETS
SAN FRANCISCO, CALIF.

Phone: Hemlock 3080

Architects' Specification Index

(For Index to Advertisements, see next page)

ASBESTOS MATERIALS
Johns-Manville Inc., of California, 500 Post street, San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.
Jones Bros. Asbestos Supply Co., Inc., 512 Second St., San Francisco.
Plant Rubber & Asbestos Works, 537-539 Bronnan Street, San Francisco.

ART METAL
Federal Ornamental Iron and Bronze Co., 16th St., and San Bruno Ave., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
California Artistic Metal & Wire Co., 349 Seventh street, San Francisco.

ARCHITECTURAL TERRA COTTA
Gladding, McBean & Company, Crocker Bldg., San Francisco.
Livermore Fire Brick Works, 604 Mission St., San Francisco.
Tropico Potteries, Inc., Glendale, Cal.

BANK FIXTURES AND INTERIORS
C. F. Weber & Co., 985 Market St., San Francisco.
Home Mfg. Co., 543 Brannan St., San Francisco.
Mullen Manufacturing Co., 64 Rausch St., San Francisco.
Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.
The Fink & Schindler Company, 218-13th St., San Francisco.

BANK SCREEN REFLECTORS
I. P. Frink, Inc., 77 O'Farrell Street, San Francisco.

BATHROOM ACCESSORIES
The Fairfacts Company, Inc., 234 W. 14th St., New York.

BEDS—WALL
California Wall Bed Co., 714 Market St., San Francisco.
Marshall & Stearns Co., Phelan Bldg., San Francisco.
Leverett T. Spaulding, 1041 Mission St., San Francisco.

BELTING AND PACKING
New York Belting and Packing Company, 519 Mission St., San Francisco.
H. N. Cook Belting Co., 401 Howard St., San Francisco.
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

BLACKBOARDS
C. F. Weber & Co., 985 Market St., San Francisco, Los Angeles and Reno, Nevada.
Stewart Sales Co., 247 Rialto Building, San Francisco.
Wentworth & Co., 539 Market Street, San Francisco.

BLINDS—VENETIAN AND DIFFUSELITE
The J. G. Wilson Corporation, 621 North Broadway, Los Angeles.
Western Blind & Screen Company, factory, Los Angeles; San Francisco representatives, Edward C. Dehn, Hearst Bldg., and C. F. Webber Co.

BOILERS
Birchfield Boiler Company, Tacoma, Washington. See advertisement for Coast agencies.
Kewanee Boiler Company, Factory Branch, Exposition Building, San Francisco.
Kewanee Water Supply System, Simonds Machinery Co., 117 New Montgomery St., San Francisco.
Main Iron Works, 1000 Sixteenth Street, San Francisco.

BONDS FOR CONTRACTORS
Bonding Company of America, Kohl Bldg., San Francisco.
Globe Indemnity Co., 444 California St., San Francisco.
Fidelity & Casualty Co. of New York, Balfour Bldg., San Francisco.
Standard Accident Insurance Company, California Commercial Union Building, San Francisco.

BOXBOARD FIBRE SHIPPING CASES
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

BRASS GOODS, CASTINGS, ETC.
H. Mueller Manufacturing Co., 1072-76 Howard St., San Francisco.

BRICK FACE, COMMON, ENAMEL, GLAZED
Remillard Brick Company, Phelan Building, San Francisco.
Richmond Pressed Brick Co., Sharon Bldg., San Francisco. Plant at Richmond, Cal.
Livermore Fire Brick Works and California Brick Co., 604 Mission St., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.
Cannon & Co., Sacramento; and 77 O'Farrell St., San Francisco.

BRICK & CEMENT COATING
Armorite and Concreta, manufactured by W. P. Fuller & Co., all principal Coast cities.
Minwax Co., Inc., 22 Battery St., San Francisco and 653 S. Clarence St., Los Angeles.
The Paraffine Companies, Inc., 475 Brannan St., San Francisco.
R. N. Nason & Co., 151 Potrero Ave., San Francisco.
Wadsworth, Howland & Co., Inc., Jas. Hambly & Son, 1333 E. 7th St., Los Angeles, and 229 Clay St., San Francisco.

BRICK STAINS
Samuel Cabot Mfg. Co., Boston, Mass., agencies in San Francisco, Oakland, Los Angeles, Portland, Tacoma and Spokane.
Armorite and Concreta, manufactured by W. P. Fuller & Co., all principal Coast cities.

BUILT-IN FIXTURES
Built-In Fixture Company, San Pablo Ave., near Dwight Way, Berkeley, and Hoosier Store, Pacific Building, San Francisco.

BUILDERS' HARDWARE
Joost Bros., agents for Russell & Erwin Hardware, 1053 Market St., San Francisco.
The Stanley Works, New Britain, Conn., Coast sales offices, San Francisco, Los Angeles, and Seattle, Wash.
Palace Hardware Company, Agents Corbin goods, 581 Market St., San Francisco.
Richards-Wilcox Mfg. Co., Aurora; Ewing-Lewis Co., 626 Underwood Bldg., San Francisco.

RALSTON IRON WORKS, Inc.
ESTABLISHED 1876
Office and Works
20th and Indiana Streets
SAN FRANCISCO
Phone Mission 5230
Structural Steel
Representing
Pauly Jail Building Co.

An Index to the Advertisements

	Page
American Face Brick Ass'n.	131
American Mail Chute Co.	157
American Marble & Mosaic Co.	48
American Rolling Mill Co.	43
American Window Glass Co.	129
Aristo Painting Co.	160
Atlas Heating & Ventilating Co.	150
Atlas Portland Cement Co.	155
Babcock Co., C. B.	48
Bacon, Edward R., Co.	4
Badt-Falk & Co.	149
Bartlett, John M.	145
Barrett & Hilp	148
Bass-Hueter Co.	33
Beckwith, Herbert	145
Bonded Floors Co.	140
Beeco	159
Berkeley Electric Co.	158
Benjamin Electric Mfg. Co.	135
Birchfield Boiler Co.	40
Browne - Langlais Electric Co.	158
Brooks & Doerr	133
Bowser & Co.	29
Bruce, E. L. Co.	137
Bull Dog Floor Clip Co.	17
Bunting Iron Works	47
Butte Electric & Mfg. Co.	158
Buttonlath Mfg. Co.	121
Cabot, Samuel Co.	141
California Brick Co.	42
Cadwallader, Gibson Co.	132
California Artistic Metal & Wire Co.	156
California Steam & Plumbing Supply Co.	163
California Stucco Products Co.	4
California Wall Bed Co.	136
Carter Bloxonend Flooring Co.	143
Central Electric Co.	161
Central Iron Works	156
Clinton Construction Co.	154
Coast Rock and Gravel Co.	168
Cobbledick-Kibbe Glass Co.	161
Coleman, Alex.	150
Columbia Marble Co.	142
Cook Belting Co.	162
Cotton & Co.	14
Cook Marble Co.	13
Crane Co.	157
Cyclops Iron Works	154
Del Monte Properties Co.	136
Detroit Steel Products Co.	24
Dierrsen, Co., D.	24
Direct Line Telephone Co.	158
Doell, Carl T.	150
Dolan Wrecking Co.	160
Drendell Electric Co.	159
Elevator Supplies Co., Inc.	141
Ellery Arms Co.	161
Evans, W. L.	44
Fairfacts Fixtures	3rd Cover
Federal Ornamental Iron Works	156
Fess System Co.	46
Fidelity & Casualty Co.	161
Fink & Schindler	160
Fire Protection Corp.	161
Fire Protection Eng. Co.	154
Fire Retardent Products Co.	133
Flagg, Edwin H. Scenic Co.	146
Frink, I. P., Inc.	134
Fuller & Goepp	143
Fuller, W. P. & Co.	28
Garnett Young & Co.	14
General Fireproofing Co.	31
Gilley-Schmid Co.	144
Gladding, McBean & Co.	45
Globe Indemnity Co.	149
Golden Gate Iron Works	156
Grinnell Company of Calif.	154
Gunn, Carle Company	30
Haines, Jones & Cadbury Co.	139
Handy Self - Cleansing Flush Valve Co.	34
Hannah Bros.	146
Harvey Hubbell, Inc.	37
Hauser Window Co.	128
Haws Sanitary Faucet Co.	152
Hermann Safe Co.	10
Herrick Iron Works	156
Hillard, C. J.	142
Hill, Hubbell & Co.	134
Holbrook, Merrill & Stetson	32
Holtzer-Cabot Electric Co.	2
Home Mfg. Co.	160
Hulting, Hurst & Hulting	154
Hunt & Co., Robert W.	133
Hunter & Hudson	144
Illinois Engineering Co.	154
Indiana Limestone Ass'n.	23
Ind. Automatic Spk'r Co.	10
Johnson, S. T.	47
Johns, Manville Co.	161
Johnson Service Co.	160
Jones Bros. Asbestos Co.	5
Joost Bros.	144
Judson Mfg. Co.	156
King's Electrical Co.	158
Kennedy, David E.	133
Kennedy Valve Co.	121
Kewanee Boiler Co.	132
Kinnear Mfg. Co.	29
Kissel, I. R.	146
Knowles, A.	148
Lannom Bros.	160
Larson-Siegrist Co., Inc.	145
Lawson & Drucker	150
Lawton & Vezey	146
Littlefield, R. W.	148
Lindgren & Swinerton, Inc.	40
MacGruer & Simpson	36
MacRorie-McLeran Co.	152
Main Iron Works	34
Magner Bros.	144
Mangrum & Otter	24
Marshall & Stearns	44
McCabe Hanger Mfg. Co.	26
McCray Refrigerator Co.	147
McLeran, R. Co.	149
McLaughlin, Jas. L.	160
McLaughlin Metal Works	138
Myers & Schwartz	151
Michel & Pfeffer Iron Works	6
Minwax Co., Inc.	147
Montague Range & Furnace Co.	130
Monson Bros.	146
Mortenson Construction Co.	156
Mott Company	159
Mueller, H., Mfg. Co.	159
Mullen Mfg. Co.	160
Musto Sons-Keenan Co.	13
Nason, R. N. & Co.	12
National Mill & Lumber Co.	32
National Steel Fabric Co.	46
National Terra Cotta Society	123
NePage, McKinney Co.	158
Newberry Electric Co.	158
Newman, H. G.	150
New York Belting Co.	163
Nordstrom, David	148
Oak Flooring Bureau	19
Oakley Paint Mfg. Co.	147
Ocean Shore Iron Works	162
Old Mission Portland Cement	35
Otis Elevator Company	168
Pacific Coast Steel Co.	162
Pacific Elevator Co.	24
Pacific Fire Extinguisher Co.	18
Pacific Foundry Co.	133
Pacific Gas & Electric Co.	20
Pacific Mfg. Co.	145
Pacific Materia's Co.	36
Pacific Plumbing Fixture Co.	2nd Cover
Pacific Rolling Mills	22
Palace Hardware Co.	36
Palm Iron Works	22
Paraffine Companies	1-39
Parker, K. E. Co.	148
Peerless Built-In Fixture Co.	126
Pelton Water Wheel Co.	11
Peters Construction Co.	124
Peterson, Carl H.	149
Petrium Sanitary Sink Co.	34D
Phillips, Chas. T. Co.	154
Picard, W. H.	160
Pittsburgh Water Heater Co.	144
Pope & Talbot	130
Plant Rubber & Asbestos Works	4
Potter Radiator Co.	34
Quandt, A. & Sons	9
Ralston Iron Works	7
Randall Control Corp.	144
Ray Mfg. Co.	47
Raymond Granite Co.	25
Richards-Wilcox Mfg. Co.	138
Richmond Brick Co.	34
Remillard Brick Co.	161
Roberts Mfg. Company	134
Robertson Co., H. H.	40
Rotary Oil Burner Company	47
Rumhf, H.	128
Ruud Heater Co.	144
Sandusky Cement Co.	125
Santa Fe Lumber Co.	130
Scott Company	145
Schrader Iron Works	156
Simmons, O. M., Co.	12
Simmonds Machinery Co.	34
Sloane, W. & J.	17
Sommer, I. M.	148
Soule, Edw. L. Co.	132
Spencer Elevator Co.	149
S. & S. Tile Co.	154
Standard Electric Time Co.	4
Standard Fence Co.	149
Standard Varnish Works	9
Stanley Works	129
Steelform Contracting Co.	148
Stewart Sales Co.	16
St. John, Robert L.	16
Strable Hardwood Co.	38, 152
Sunset Lumber Co.	130
Tittle, H. S.	158
Toledo Scale Co.	11
Tompkins-Kiel Marble Co.	41
Tormey Co.	144
Tropico Potteries, Inc.	157
Trost, Robert	146
Truscon Steel Co.	30
United Alloy Steel Corp.	161
United Materials Co.	34
U. S. Metal Products Co.	27
Van Emon Elevator Co.	145
Van Fleet-Freear Co.	20
Vogt, Alfred	146
Vonnegut Hardware Co.	15
Vermont Marble Co.	142
Vukicevich & Bagge	148
Wadsworth, Howland & Co.	2
Wayne Tank and Pump Co.	34B & C
Walter, D. N. & E. Co.	142
Weber, C. F. Co.	157
Wells, A. F.	145
Wesix Electric Heater	18
West Coast Porcelain Co.	Back Cover
Western Asbestos & Magnesia Co.	22
Western Blind & Screen Co.	21
Western States Seating Co.	145
Western Iron Works	22
Westinghouse Mfg. Co.	3
White Bros.	127
Wickwire Spencer Steel Corp.	40
Williams Radiator Co.	147
Wilson, J. G., Corp.	26
Wilson, W. F. Co.	150
Witt, G. E.	48
Zelinsky, D. & Co.	149

A. Quandt & Sons

OUR WORK IS THE BEST GUARANTEE OF THE QUALITY OF OUR SERVICE

374 GUERRERO ST. **San Francisco**

Painters - Decorators

SINCE 1885

3217 So. CENTRAL AVE. **Los Angeles**

ARCHITECTS' SPECIFICATION INDEX—Continued

BUILDING MATERIALS, SUPPLIES, ETC.
- Pacific Materials Co., Underwood Bldg., San Francisco.
- Waterhouse-Wilcox Co., 523 Market St., San Francisco.
- C. H. Jensen Co., Call Building, San Francisco.
- The General Fireproofing Company, 20 Beale Street, San Franrisco

BUILDING PAPER
- The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

BUILDING TILE (Burned Clay)
- California Brick Co., 604 Mission St., San Francisco.

CABINET MAKERS
- Fink & Schindler Company, 218 13th St., San Francisco.
- Home Manufacturing Company, 543 Brannan St., San Francisco.
- Mullen Manufacturing Company, 64 Rausch St., San Francisco.
- Lannom Bros. Mfg. Co., 5th and Magnolia Sts., Oakland.
- Pacific Mfg. Co., San Francisco, Los Angeles and Oakland.

CEMENT
- Atlas Portland Cement Co., agencies in all principal Coast cities.
- Old Mission Portland Cement Co., Mills Bldg., San Francisco.
- Medusa Stainless White Cement, plain and waterproofed, carried in stock and sold by leading building supply dealers in California, Oregon and Washington.
- The Paraffine Companies, San Francisco, and principal Coast Cities.

CEMENT EXTERIOR WATERPROOF PAINT
- Armorite, sold by W. P. Fuller & Co., all principal Coast cities.
- Minwax Co., Inc., 22 Batery St., San Francisco and 653 S. Clarence St., Los Angeles.
- The General Fireproofing Company, 20 Beale Street, San Francisco
- Bay State Brick and Cement Coating, sold by James Hambly, 229-233 Clay St., San Francisco.

CEMENT STUCCO
- "California" sold by California Stucco Products Company, Holbrook building, San Francisco.

CEMENT TESTS—CHEMICAL ENGINEERS
- Robert W. Hunt & Co., 251 Kearny St., San Francisco.

CLAY PRODUCTS
- California Brick Co. and Livermore Fire Brick Works, 604 Mission St., San Francisco.
- Cannon & Co., Sacramento, Cal.
- Gladding, McBean & Co., Crocker Bldg., San Francisco.
- Los Angeles Presaed Brick Co., Frost Bldg., Los Angeles.
- Tropico Potteries, Inc., Glendale, Cal.
- United Materials Co., Sharon Bldg., San Francisco.

CLOCKS—ELECTRIC TIME
- Standard Electric Time Co., 461 Market St., San Francisco.
- Pacific Electric Clock Company, 86 Third St., San Francisco.

COLD STORAGE PLANTS
- Cyclops Iron Works, 837 Folsom St., San Francisco.

COMPOSITION FLOORS
- "Linotol" plastic flooring, Hill, Hubbell & Co., 115 Davis St., San Francisco; 410 San Fernando Bldg., Los Angeles.
- Western Asbestos Magnesia Company, 25 South Park, San Francisco.
- Hoff Magnesite Co., San Francisco. Miller & Alf, 337 Monadnock Bldg., San Francisco, general agents.

CONCRETE OR CEMENT HARDENER
- Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
- The General Fireproofing Company, 20 Beale Street, San Francisco

CONCRETE MIXERS
- Foote and Jaeger mixers sold by Edward R. Bacon Co., 51 Minna St., San Francisco, also Los Angelea.

CONCRETE REINFORCEMENT
- Edw. L. Soule Co., Rialto Bldg., San Francisco.
- Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
- Clinton Welded Wire Fabric, Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.
- Judson Mfg. Co., 817-821 Folsom St., San Francisco.
- Pacific Coast Steel Company, Rialto Bldg., San Francisco.
- Triangle Mesh Fabric. Sales agents, Pacific Materials Co., 525 Market St., San Francisco.
- Truscon Steel Co., 709 Mission St., San Francisco.
- Badt-Falk Co., Call-Post Bldg., San Francisco.

CONDUITS
- "Sherarduct," Garnett Young & Company, 612 Howard St., San Francisco.

CONTRACTORS, GENERAL
- Barrett & Hilp, 918 Harrison St., San Francisco.
- Herbert Beckwith, Everson Bldg., Oakland.
- Larsen-Siegrist Co., Inc., 807 Claus Spreckels Bldg., San Francisco.
- Lindgren-Swinerton, Inc., Standard Oil Building, San Francisco
- R. W. Littlefield, 357-12th St., Oakland.
- K. E. Parker Co., Inc., Clunie Bldg., San Francisco.
- Dinwiddie Construction Co., Crocker Bldg., San Francisco.
- John M. Bartlett, 357 Twelfth St., Oakland.
- Clinton Construction Company, 923 Folsom St., San Francisco.
- Monson Broa., 251 Kearny St., San Francisco.
- Geo. Wagner, 251 Kearny St., San Francisco.
- T. B. Goodwin, 180 Jessie St., San Francisco..
- McLeran & Co., R., Hearst Bldg., San Francisco.

SATINETTE WHITE ENAMEL

FLATTINE CABINET FINISH
ELASTICA INTERIOR AND ELASTICA EXTERIOR

Standard Varnish Works

55 STEVENSON STREET SAN FRANCISCO

THE HERMANN SAFE CO.

Manufacturers of Fire and Burglar Proof Safes, Vaults and Safe Deposit Boxes

Also Representatives for the

YORK SAFE & LOCK CO. OF YORK, PA.

216-224 Fremont Street San Francisco, Cal.

ARCHITECTS' SPECIFICATION INDEX—Continued

Vukicevich & Bagge, 815 Bryant St., San Francisco.
Peters Construction Company, 705 Atlas Building, San Francisco, and Builders' Exchange, Oakland.
Robert Trost, 26th and Howard Sts., San Francisco.
I. M. Sommer, 401 Balboa Bldg., San Francisco.
Jas. L. McLaughlin, 251 Kearny St., San Francisco.
Alfred H. Vogt, 185 Stevenson St., San Francisco.
Lange and Bergstrom, Sharon Bldg., San Francisco and Washington Bldg., Los Angeles.
David Nordstrom, 4146 Emerald Street, Oakland.
Carl T. Peterson, 185 Stevenson St., San Francisco.

CONTRACTORS' EQUIPMENT
Edward R. Bacon Co., Folsom at 17th St., San Francisco, and Los Angeles.

CONVENIENCE OUTLETS
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St.

CORK TILE
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.
David E. Kennedy, Sharon building, San Francisco, and Story building, Los Angeles.

CRUSHED ROCK
Coast Rock & Gravel Co., Call-Post Bldg., San Francisco.

CURTAINS—STEEL, ROLLING, FIREPROOF
J. G. Wilson Corp., 621 N. Broadway, Los Angeles.

DAMP-PROOFING AND WATERPROOFING
Armorite Damp Resisting Paint, made by W. P. Fuller & Co., San Francisco.
"Imperial," manufactured by Brooks & Doerr, Merchants National Bank Building, San Francisco.
Minwax Co., Inc., 22 Battery St., San Francisco, and 653 S. Clarence St., Los Angeles.
Samuel Cabot Co., Boston; represented in San Francisco by Pacific Materials Co., Underwood Bldg., San Francisco.
"Pabco" Damp-Proofing Compound, sold by the Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.
The General Fireproofing Company, 20 Beale Street, San Francisco

DOOR HANGERS
McCabe Door Hanger Company, leading hardware stores.
Pitcher Hanger, sold by National Mill & Lumber Co., 326 Market St., San Francisco.
Richard-Wilcox Mfg. Co., the Ewing-Lewis Co., 626 Underwood Building, San Francisco.
Stanley Works, New Britain, Conn., Monadnock Bldg., San Francisco.

DOORS—VANISHING
W. L. Evans, 700 Block B., Washington, Ind.

DRAIN PIPE AND FITTINGS
"Corrosiron" Acid Proof, manufactured by Pacific Foundry Co., Harrison and 18th Sts., San Francisco.

DRINKING FOUNTAINS
Haws Sanitary Drinking Faucet Co., 1808 Harmon St., Berkeley, and C. F. Weber & Co., San Francisco and Los Angeles.
Crane Company, San Francisco, Oakland, and Los Angeles.
Pacific Porcelain Ware Co., 67 New Montgomery St., San Francisco.
Haines, Jones & Cadbury Co., 857 Folsom St., San Francisco.

DUMB WAITERS
Spencer Elevator Company, 166-7th St., San Francisco.
San Francisco Elevator Company, Inc., 860 Folsom St., San Francisco.
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.

ELECTRICAL CONTRACTORS
Butte Electrical Equipment Company, 530 Folsom St., San Francisco.
Butte Electric & Manufacturing Co., 534 Folsom St., San Francisco.
Central Electric Company, 177-79 Minna St., San Francisco
King's Electrical Co., Builder's Exchange, Oakland.
NePage, McKenny Co., 589 Howard St., San Francisco.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.
H. S. Tittle, 85 Columbia Square, San Francisco
Brown-Langlais Electrical Construction Co., 315 Fifth Street, San Francisco.
A. F. Wells Company, 155 Second St., San Francisco.
Newberry Electric Company, Alta Bldg., San Francisco

ELECTRIC PLATE WARMER
The Prometheus Electric Plate Warmer for residences, clubs, hotels, etc. Sold by M. E. Hammond, Pacific Bldg., San Francisco.

ELECTRICAL SUPPLIES AND EQUIPMENT
"H. & H. Switches," Garnett Young & Co., 612 Howard St., San Francisco.
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St.
Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco.

ELECTRIC SAFETY INTERLOCKS
Richards-Wilcox Mfg. Co., 525 Market St., San Francisco.

ELECTRIC HEATING
Wesix Electric Heaters, manufactured by W. Wesley Hicks, Rialto Building, San Francisco.

ELEVATORS—PASSENGER and FREIGHT
Pacific Elevator & Equipment Co., 1129 Howard Street, San Francisco.
Otis Elevator Company, Stockton and North Point, San Francisco.
Spencer Elevator Company, 166-7th St., San Francisco.
San Francisco Elevator Co., 860 Folsom St., San Francisco.

Metropolitan 4597 S. F. Phone, Garfield 204

Independent Automatic Sprinkler Company

Fire Protection Engineers

O. T. Johnson Building, Los Angeles 72 Natoma Street, San Francisco

TOLEDO AUTOMATIC SPRINGLESS SCALES
12 OUNCES TO 20 TONS
for Factories, Warehouses, Wholesale Houses—in fact any kind of business where accurate weight is desired
676 MISSION ST. Phone Sutter 250 TOLEDO SCALE CO. SAN FRANCISCO California

ARCHITECTS' SPECIFICATION INDEX—Continued

Van Emon Elevator Company, 1159 Howard St., San Francisco.

ELEVATOR MOTORS AND CONTROL
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., and First National Bank Bldg., San Francisco, Calif.

ELEVATOR SIGNALS, DOOR EQUIPMENT, ETC.
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.
Randall Control & Hydrometric Corporation, 265A Minna St., San Francisco, and 523 Central Bldg., Los Angeles.
Richards-Wilcox Mfg. Co., 525 Market St., San Francisco.

ENGINEERS — CONSULTING, ELECTRICAL, MECHANICAL
Hunter & Hudson, Rialto Bldg., San Francisco.
Robert L. St. John, 1011 Flat Iron Bldg., San Francisco
Charles T. Phillips Company, Bank of Italy Bldg., San Francisco, and Roberts Bldg., Los Angeles.

FAIENCE TILE
Tropico Potteries, Inc., Glendale, Cal.

FELTS
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FENCES—WIRE AND IRON
Standard Fence Company, 432 Bryant, San Francisco and 60th and Lowell Sts., Oakland.

FIRE BRICK, TILE & CLAY
Livermore Fire Brick Works, 604 Mission St., San Francisco.

FIRE EXIT LATCHES
Vonnegut Hardware Co., Indianapolis, Ind., represented in San Francisco by Abcel Jensen Co., Call Building.

FIRE ESCAPES
Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
Western Iron Works, 141 Beale St., San Francisco.

FIRE HOSE RACKS
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

FIRE-PROOF DOORS
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
U. S. Metal Products Co., 330-10th St., San Francisco.
Kinnear Mfg. Co., represented in San Francisco by Pacific Materials Co., Underwood Bldg.
The J. G. Wilson Corporation, 621 North Broadway, Los Angeles.

FIRE SPRINKLERS—AUTOMATIC
Fire Protection Engineering Co., 67 Main St., San Francisco.
Grinnell Company of the Pacific, 453 Mission St., San Francisco.
Independent Automatic Sprinkler Co., 72 Natoma St., San Francisco.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.

FIRE RETARDING PAINT
The Paraffine Companies, Inc., 34 First St., San Francisco.
Fire Retardent Products Co., 2838 Hannah St., Oakland, Cal.

FIXTURES—BANK, OFFICE, STORE, ETC.
Home Manufacturing Company, 543 Brannan St., San Francisco.
The Fink & Schindler Company, 218-13th St., San Francisco.
Mullen Manufacturing Co., 64 Rausch St., San Francisco.
C. F. Weber & Co., 985 Market St., San Francisco, and 210 N. Main St., Los Angeles, Cal.

FLOORS, BLOCK
Carter, Bloxonend Flooring Co., Kansas, Mo., represented on Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

FLOOR CLIPS
Bull Dog Floor Clip Sales Co., 77 O'Farrell St., San Francisco, and 600 Metropolitan Bldg., Los Angeles.

FLOORING, HEAVY DUTY
Carter, Bloxonend Flooring Co., Kansas, Mo., represented on Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

FLOORS—TILE, CORK, ETC.
Mangrum & Otter, 827 Mission St., San Francisco.

FLOOR VARNISH
Bass-Hueter and San Francisco Pioneer Varnish Works, 816 Mission St., San Francisco.
Fifteen for Floors, made by W. P. Fuller & Co., San Francisco.
Standard Varnish Works, Chicago, New York and San Francisco.
R. N. Nason & Co., San Francisco and Los Angeles.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FLOORS—HARDWOOD
Oak Flooring Bureau, Ashland Block, Chicago, Ill.
Cadwallader, Gibson Co., 5th & Brannan St., San Francisco.
Parrott & Co., 320 California St., San Francisco.
Strable Hardwood Company, 511 First St., Oakland.
E. L. Bruce Co., Manufacturers, Memphis, Tenn.
White Bros., 5th and Brannan Sts., San Francisco.

FLOOR TREATMENT—HARDWOOD, COMPOSITION AND CONCRETE
Minwax Co., Inc., 22 Battery St., San Francisco and 653 S. Clarence St., Los Angeles.

FLOORS—MASTIC—FLOOR COVERING
Hill, Hubbell & Company, 115 Davis St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FLUE LINING
California Brick Company, 604 Mission St., San Francisco.

THE PELTON WATER WHEEL CO.
Hydraulic Engineers
Light-Duty High-Head Pumps for Tank and Other Building Service
Heavy-Duty Pumps for Municipal and General Water Supply
2022 Harrison Street San Francisco

NASON'S OPAQUE FLAT FINISH A VALUABLE OIL PAINT FOR WALLS, CEILINGS, ETC.
Made in California to stand Pacific Coast climatic conditions
R. N. Nason & Co., Paint Makers
PORTLAND 151 Potrero Ave.—SAN FRANCISCO—436 Market St. SEATTLE

ARCHITECTS' SPECIFICATION INDEX—Continued

FLUSH VALVES
Handy Self-Cleaning Flush Valve Co., 731 Folsom St., San Francisco.

FUEL OIL SYSTEMS
S. T. Johnson Co., 1337 Mission St., San Francisco.
S. F. Bowser & Co. Inc., 612 Howard St., San Francisco.
Wayne Tank and Oil Co., 430 Fourth St., San Francisco.

FURNACES—WARM AIR
Mangrum & Otter, 827 Mission St., San Francisco.
Montague Range and Furnace Co., 826 Mission St., San Francisco.
C. B. Babcock Company, 768 Mission St., San Francisco.

FURNITURE—OFFICE, SCHOOL, CHURCH,
Home Manufacturing Company, 543 Brannan St., San Francisco.
C. F. Weber & Co., 985 Market St., San Francisco.
W. & J. Sloane, 216 Sutter St., San Francisco.
Western States Seating Co., 39 Second St., San Francisco.
H. Rumph, 567 Howard St., San Francisco.
Fink & Schindler Company, 218-19th St., San Francisco.

FURRING TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

GARAGE HARDWARE
The Stanley Works, New Britain, Conn., Coast sale offices, San Francisco, Los Angeles and Seattle, Wash.
Richards-Wilcox Mfg. Co., 525 Market St., San Francisco.

GAS HEATING
Pittsburg Water Heater Company, 478 Sutter St., San Francisco.
Ruud Automatic Water Heater, sold by Ruud Heater Company, 431 Sutter St., San Francisco.
C. B. Babcock Company, representing General Gas Light Company, 768 Mission St., San Francisco.

GLASS
American Window Glass Co., represented by L. H. Butcher Co., 862 Mission St., San Francisco.
Cobbledick-Kibbe Glass Co., 666 Howard St., San Francisco.
Fuller & Goepp, 32 Page St., San Francisco, and Jackson, at Eleventh St., Oakland.
W. P. Fuller & Company, all principal Coast cities.

GRADING, WRECKING, ETC.
Dolan Wrecking & Construction Co., 1607 Market St., San Francisco.

GRANITE
Raymond Granite Co., Potrero Ave., and Division St., San Francisco.

GRAVEL AND SAND
Coast Rock & Gravel Co., Call-Post Bldg., San Francisco.
Del Monte White Sand, sold by Del Monte Properties Co., Crocker Bldg., San Francisco.

GYMNASIUM EQUIPMENT—LOCKERS, ETC.
Ellery Arms Co., 583 Market St., San Francisco.

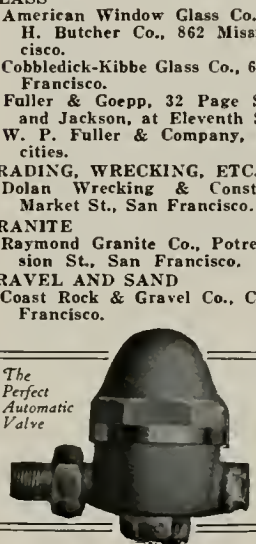
HARDWARE
Joost Bros., agents for Russell & Erwin Hardware, 1053 Market St., San Francisco.
The Stanley Works, New Britain, Conn.; Coast sales offices, San Francisco, Los Angeles, and Seattle, Wash.
Corbin hardware, sold by Palace Hardware Co., 581 Market St., San Francisco.
Vonnegut hardware, sold by Abeel-Jensen Co. Call Bldg., San Francisco.
Richards-Wilcox Mfg. Co., Aurora, Ill.; Ewing-Lewis Co., 626 Underwood Building, San Francisco.

HARDWOODS
White Brothers, 5th and Brannan Streets, San Francisco.

HEATING AND VENTILATING CONTRACTORS
Atlas Heating and Ventilating Company, Inc., Fourth and Freelon Sts., San Francisco.
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St., San Francisco.
Hateley & Hateley, Mitau Bldg., Sacramento.
Mangrum & Otter, 827-831 Mission St., San Francisco.
Lawson & Drucker, 450 Hayes St., San Francisco.
Carl T. Doell, 467 21st St., Oakland.
Luppen, Hawley & Thing, 906 7th St., Sacramento.
William F. Wilson Co., 328 Mason St., San Francisco.
W. H. Picard, 5656 College Ave., Oakland.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.
Scott Company, 243 Minna St., San Francisco.
H. G. Newman Co., 2004 Telegraph Ave., Oakland.

HEATING & VENTILATING EQUIPMENT
W. S. Haines & Co.'s steam specialties. O. M. Simmons Company, 115 Mission St., San Francisco.
Hulting, Hurst & Hulting, representing Jas. P. Marsh Co., Monadnock Bldg., San Francisco.
Illinois Engineering Co., Pacific Bldg., San Francisco.
Williams Radiator Company, 571 Mission St., San Francisco.

HEATERS, GAS GRATES, RADIATORS, ETC.
General Gas Light Company, 768 Mission St., San Francisco.
Ra-Do Fumeless Gas Radiators, Potter Radiator Corporation, 478 Sutter St., San Francisco
Humphrey Radiantfire, sold by Rudd Heater Company, 431 Sutter St., San Francisco.
Williams Radiator Company, "Gas Steam Radiators," 571 Mission St., San Francisco.

The Perfect Automatic Valve

W. S. Haines & Co., Steam Specialties, Vacuum and Vapor Systems of Heating
"Twenty-four years of satisfactory service."
(See Page 1503 of Sweet's Catalogue)
O. M. SIMMONS CO. 115 Mission St., San Francisco
Phone: Douglas 5497

Clarence E. Musto, Pres. Joseph B. Keenan, Vice-Pres. Guido J. Musto, Sec'y & Treas.

JOSEPH MUSTO SONS--KEENAN CO.

Phone Franklin —6365— MARBLE Office and Mills: 535-565 North Point St., SAN FRANCISCO, CAL.

ARCHITECTS' SPECIFICATION INDEX—Continued

McLaughlin Metal Works, 223 J St., Sacramento.

HOLLOW BUILDING TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

HOLLOW TILE BLOCKS
Cannon & Co., plant at Sarramento; 77 O'Farrell St., San Francisco.
California Brick Company, 604 Mission St., San Francisco.
Gladding, McBean & Co., San Francisco, Los Angeles, Oakland and Sacramento.

HOSE—UNDERWRITERS UNLINED LINEN—RUBBER
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

HOSPITAL FIXTURES
Mott Company of California, 553 Mission St., San Francisco.

HOSPITAL SIGNAL SYSTEMS
Chicago Signal Co., represented by Garnett Young & Co., 612 Howard St., San Francisco.
Holtzer-Cabot Electric Company, San Francisco Branch, Aronson Building.

ICE MAKING MACHINERY
Cyclops Iron Works, 837 Folsom St., San Francisco.

INCINERATORS
The Incinerite, sold by M. E. Hammond, Mezzanine, Pacific Building, San Francisco.

INDUSTRIAL LIGHTING EQUIPMENT
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

INGOT IRON
"Armco" brand, manufactured by American Rolling Mill Company, Middletown, Ohio, and 10th and Bryant Sts., San Francisco.

INSPECTIONS AND TESTS
Robert W. Hunt & Co., 251 Kearny St., San Francisco.

INSULATION
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

JAIL EQUIPMENT
Ralston Iron Works, 20th and Indiana Sts., San Francisco.

LAMP POSTS, ELECTROLIERS, ETC.
J. L. Mott Iron Works, 553 Mission St., San Francisco.

LANDSCAPE ARCHITECT
Emerson Knight, 704 Market St., San Francisco.
Cotton & Co., Call Building, San Francisco.

LANDSCAPE GARDENERS
MacRorie-McLaren Co., 514-516 Phelan Bldg., San Francisco.

LATHING AND PLASTERING
MacGruer & Simpson, 226 Tehama St., San Francisco.
A. Knowles, Call-Post Bldg., San Francisco.

LATHING MATERIAL—WIRE, METAL, ETC.
Buttonlath Manufacturing Co., Los Angeles and 207 Balboa Bldg., San Francisco.
Pacific Materials Co., 525 Market St., San Francisco.
The General Fireproofing Company, 20 Beale Street, San Francisco
Truscon Steel Co., 709 Mission Street, San Francisco.
Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

LIGHT, HEAT AND POWER
Great Western Power Company, Stockton St., near Sutter, San Francisco.
Pacific Gas & Electric Co., Sutter St., San Francisco.

LIGHTING FIXTURES
Benjamin Electric Mfg. Co., New York, Chicago, 580 Howard St., San Francisco.
D. Dierssen Co., 20 Second Street, San Francisco. Distributors Solar-Lite fixtures.
Roberts Mfg. Co., 663 Mission St., San Francisco.

LIMESTONE, INDIANA
Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana.

LINOLEUM
D. N. & E. Walter & Co., 562 Mission St., San Francisco.
The Paraffine Companies, factory in Oakland; office, 34 First St., near Market, San Francisco.
W. & J. Sloane, 216 Sutter St., San Francisco.
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

LINOTILE
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

LUMBER
Hart-Wood Lumber Co., Fifth and Berry Sts., San Francisco.
Pacific Manufacturing Company, San Francisco, Oakland, Los Angeles and Santa Clara.
Pope & Talbot, foot of Third St., San Francisco.
Santa Fe Lumber Co., 16 California St., San Francisco.
Sunset Lumber Company, First and Oak Sts., Oakland.
White Bros., 5th and Brannan Sts., San Francisco.

MAIL CHUTES
American Mailing Device Corp., represented on Pacific Coast by Waterhouse-Wilcox Co., 523 Market St., San Francisco.

MANTELS—WOOD, TILE, ETC.
Mangrum & Otter, 827-831 Mission St., San Francisco.

MARBLE
American Marble and Mosaic Co., 25 Columbus Square, San Francisco.

RAY COOK MARBLE CO.
IMPORTED AND DOMESTIC MARBLES
For Building Construction
Factory and Office, foot of Powell St., Oakland Phone Piedmont 1009

Cotton & Company
LANDSCAPE ARCHITECTS AND ENGINEERS
74 NEW MONTGOMERY STREET, SAN FRANCISCO
Telephone Douglas 5541

ARCHITECTS' SPECIFICATION INDEX—Continued

Ray Cook Marble Company, foot of Powell St., Oakland.
Joseph Musto Sons, Keenan Co., 535 N. Point St., San Francisco.
Vermont Marble Co., Coast branches, San Francisco, Portland and Tacoma.
Tompkins-Kiel Marble Company, 505 Fifth Ave., New York; also Chicago, Philadelphia and San Francisco.
Columbia Marble Co., 413 Rialto Bldg., San Francisco.

METAL DOORS AND WINDOWS
Waterhouse-Wilcox Co., Inc., 523 Market St., San Francisco.
U. S. Metal Products Co., 330 Tenth St., San Francisco.

METAL FURNITURE
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

METAL STORE FRONTS
Cobbledick-Kibbe Glass Company, 666-8 Howard street, San Francisco, and Washington at Third St., Oakland.

MILL WORK
Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.
National Mill and Lumber Co., San Francisco and Oakland.
Lannom Bros. Mfg. Co., 5th and Magnolia Sts., Oakland.
The Fink & Schindler Company, 218-13th St., San Francisco.

OIL BURNERS
Bunting Iron Works, 1215 First Nat. Bank Bldg., San Francisco.
Fess System Co., 220 Natoma St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
G. E. Witt Co., 862 Howard St., San Francisco.
W. S. Ray Mfg. Company, Rialto Bldg., San Francisco, and 2206 San Pablo Ave., Oakland.
Rotary Oil Burner Company, 159 Twelfth St., Oakland.

OIL STORAGE AND DISTRIBUTING STATIONS
S. F. Bowser & Co., Inc., 612 Howard St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
Wayne Oil Tank & Pump Co., 430 Fourth St., San Francisco; 830 S. Los Angeles St., Los Angeles.

ORNAMENTAL IRON AND BRONZE
California Artistic Metal and Wire Co., 349 Seventh St., San Francisco.
Federal Ornamental Iron and Bronze Co., 16th St., and San Bruno Ave., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
C. J. Hillard Company, Inc., 19th and Minnesota Sts., San Francisco.
Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.

PANIC DOORS
Vonnegut hardware, sold by Abeel-Jensen Co. Call Bldg., San Francisco.

PAINT FOR CEMENT AND STUCCO
Wadsworth, Howland & Co., Inc., Jas. Hambly & Son, 1333 E. 7th St., Los Angeles, and 229 Clay St., San Francisco.

PAINT FOR STEEL STRUCTURES, BRIDGES, ETC.
The Paraffine Companies, Inc., 34 First St., San Francisco.
Premier Graphite Paint and Pioneer Brand Red Lead, made by W. P. Fuller & Co., San Francisco.
Hill, Hubbell & Company, 115 Davis St., San Francisco.

PAINTING, TINTING, ETC.
I. R. Kissel, 1747 Sacramento St., San Francisco.
D. Zelinsky & Sons, San Francisco and Los Angeles.
The Tormey Co., 681 Geary St., San Francisco.
A. Quandt & Son, 374 Guerrero St., San Francisco.
Artistic Painting Company, 39 Tehama St., San Francisco.

PAINTS, OILS, ETC.
Magner Bros., 414-424 Ninth St., San Francisco.
Bass-Hueter Paint Co., Mission, near Fourth St., San Francisco and all principal Coast cities.
R. N. Nason & Company, San Francisco, Los Angeles, Portland and Seattle.
W. P. Fuller & Co., all principal Coast cities.
Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Fire Retardent Products Co., 2838 Hannah St., Oakland, Cal.
Oakley Paint Manufacturing Company, 727 Antonia St., Los Angeles, and Hearst Building, San Francisco.

PARTITIONS—FOLDING AND ROLLING
J. G. Wilson Corporation, 621 N. Broadway, Los Angeles; Waterhouse-Wilcox Co., Underwood Bldg., San Francisco.

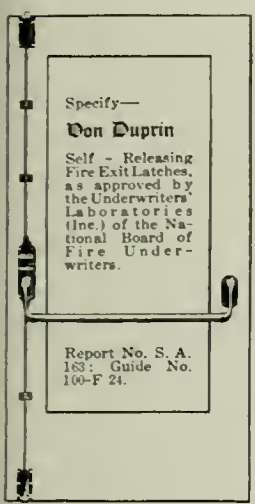
PARTITION TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

PLASTERING CONTRACTORS
A. Knowles, Call Bldg., San Francisco.
MacGruer & Simpson, 266 Tehama St., San Francisco.

SILENT CALL **Chicago HOSPITAL** SIGNAL SYSTEMS
GARNETT YOUNG AND COMPANY
Pacific Coast Sales Engineers
612 Howard St., San Francisco
Seattle Los Angeles Portland

Von Duprin

Self-Releasing Fire Exit Latches


Specify—
Von Duprin
Self - Releasing Fire Exit Latches, as approved by the Underwriters' Laboratories (Inc.) of the National Board of Fire Underwriters.
Report No. S. A. 163: Guide No. 100-F 24.

Permanence

Von Duprin Self-Releasing Fire Exit Latches are made to become a permanent part of the buildings on which they are placed.

They are designed and built with the precision, extreme care and rigid inspection which make for long life and instantaneous response to pressure on the cross bar.

This care, this determination to build a supremely fine piece of mechanism, regardless of cost, is the very thing which has made **Von Duprins** standard equipment on many of America's finest buildings.

It is also responsible for the fact that no **Von Duprin** anywhere has ever failed to operate in an emergency.

Ask us for Catalog 12-L, or see "Sweet's," pages 1323-1327.

VONNEGUT HARDWARE CO.
Indianapolis, Ind.

St. Vincents Home
Chestnut Hill, near Lansdowne, Pa.
Paul Meregkan, Philadelphia
Architect

BLACKBOARDS
First Grade Natural Slate Green or Black Composition Board
Estimates Given for Complete Installations School Furniture and Supplies
STEWART SALES CO.
247 Rialto Building San Francisco. Cal.

ARCHITECTS' SPECIFICATION INDEX—Continued

PLUMBING CONTRACTORS
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St., San Francisco.
Doell, Carl T., 467 21st St., Oakland.
Hateley & Hateley, Mitau Bldg., Sacramento.
Scott Co., Inc., 243 Minna St., San Francisco.
Wm. F. Wilson Co., 328 Mason St., San Francisco.
Luppen, Hawley & Thing, 906 7th St., Sacramento.
W. H. Picard, 5656 College Ave., Oakland.
H. G. Newman Company, 2004 Telegraph Ave., Oakland.

PLUMBING SUPPLY HOUSES
Crane Company, all principal coast cities.
Haines, Jones & Cadbury Co., 857 Folsom St., San Francisco.
Holbrook, Merrill & Stetson, 64 Sutter St., San Francisco.
H. Mueller Manufacturing Company, 1072-76 Howard St., San Francisco.
J. L. Mott Iron Works, D. H. Gulick, selling agent, 553 Mission St., San Francisco.
Pacific Sanitary Manufacturing Co., 67 New Montgomery St., San Francisco.
West Coast Porcelain Manufacturers, 334-335 Wells Fargo Building, 85 Second St., San Francisco.

POLES AND PILING
Santa Fe Lumber Co., 16 California St., San Francisco.

PUMPS—HAND OR POWER
Chicago Pump Co., represented by Garnett, Young & Co., 612 Howard St., San Francisco.
Simonds Machinery Co., 117 New Montgomery St., San Francisco.
Ocean Shore Iron Works, 558 Eighth St., San Francisco.
Pelton Water Wheel Co., 2022 Harrison St., San Francisco.
S. F. Bowser & Co., Inc., 612 Howard St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
Wayne Tank & Pump Co., 430 Fourth St., San Francisco; 830 S. Los Angeles St., Los Angeles.
Byron Jackson Iron Works, 55 New Montgomery St., San Francisco.

REINFORCING STEEL
Edward L. Soule, Rialto Bldg., San Francisco.
Badt-Falk & Co., Call Bldg., San Francisco.
Judson Iron Works, San Francisco and Oakland.
Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
Pacific Coast Steel Co., Rialto Bldg., San Francisco.
Truscon Steel Co., 709 Mission St., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

REFLECTORS
I. P. Frink, Inc., 77 O'Farrell St., San Francisco.
Benjamin Electric Mfg. Co., 580 Howard St., San Francisco.

REFRIGERATORS
McCray Refrigerator Company San Francisco office, 765 Mission St.

ROOFING AND ROOFING MATERIALS
"Malthoid" and "Ruberoid," also 'Pabco" ten and twenty year roofs, manufactured by the Paraffine Companies, Inc., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.
H. H. Robertson Co., Hobart Bldg., San Francisco.
Jones Brothers Asbestos Supply Co., 512 Second St., San Francisco.
Johns-Manville Inc., of California, 500 Post St., San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.

RUBBER TILING—INTERLOCKING
New York Belting & Packing Co., 518-19 Mission St., San Francisco.

RUGS & CARPETS
W. & J. Sloane, 216 Sutter St., San Francisco.

SAFETY TREADS
Pacific Materials Co., 525 Market St., San Francisco.

SAND
Coast Rock & Gravel Co., Call Bldg., San Francisco.
Del Monte White Sand, Del Monte Properties Co., 401 Crocker Bldg., San Francisco.

SASH AND CABLE CHAINS
Smith & Egge Mfg. Co., Bridgeport, Conn. Coast agents, Rawlins & Smith, San Francisco and Los Angeles.

SAFES AND VAULTS
Hermann Safe Company, 216 Fremont St., San Francisco.

SCALES
Toledo Scale Company, 676 Mission St., San Francisco.

SCENIC PAINTING—DROP CURTAINS, ETC.
The Edwin H. Flagg Scenic Co., 1638 Long Beach Ave., Los Angeles, and 17th and Mission Sts., San Francisco.

SCHOOL AND THEATER EQUIPMENT
H. Rumpf, 567 Howard St., San Francisco.

SHEATHING AND SOUND DEADENING
Samuel Cabot Mfg. Co., Boston, Mass., agencies in San Francisco, Oakland, Los Angeles, Portland, Tacoma and Spokane.
The Paraffine Companies, Inc., 34 First St., San Francisco.

SHEET METAL WORK
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
U. S. Metal Products Co., 330-10th St., San Francisco.

ELECTRICAL LAYOUTS AND PLANS
FOR BUILDINGS, INDUSTRIAL PLANTS, ETC.
ROBERT L. ST. JOHN
Phone Douglas 5902 1011 FLAT IRON BUILDING San Francisco, Calif.

BULL DOG FLOOR CLIPS

The use of this clip to anchor wood floors to concrete is cheap insurance against floor buckle and dry rot. Write for samples and special information.

BULL DOG FLOOR CLIP SALES CO.

77 O'Farrell St., San Francisco 600 Metropolitan Bldg., Los Angeles

L. T. KELLEY, General Manager

ARCHITECTS' SPECIFICATION INDEX—Continued

United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

SHINGLE STAINS

Bass-Hueter Paint Company, all principal Coast cities.

Cabot's Creosote Stains, sold by Pacific Bldg., Materials Co., 525 Market St., San Francisco.

Fuller's Pioneer Shingle Stains, made by W. P. Fuller & Co., San Francisco.

The Paraffine Companies, San Francisco, and principal Coast Cities.

SHUTTERS—ROLLING, FIRE, STEEL, WOOD

J. G. Wilson Corp, 621 North Broadway, Los Angeles.

SIGNALING & PROTECTIVE SYSTEMS

Holtzer-Cabot Electric Co., 125 Armory St., Boston; 408 Claus Spreckels Building, San Francisco.

Garnett, Young & Co., 612 Howard St., San Francisco.

SINKS—COMPOSITION

Petrium Sanitary Sink Co., Fifth and Page Sts., Berkeley.

SKYLIGHTS

H. H. Robertson Co., represented on the Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

STEEL HEATING BOILERS

Birchfield Boiler Company, Tacoma, Washington.

Kewanee Boiler, factory branch, Exposition Building, San Francisco.

STEEL TANKS, PIPE, ETC.

Ocean Shore Iron Works, 55 Eighth St., San Francisco.

STEEL TANKS

Main Iron Works, 1000 Sixteenth St., San Francisco

S. T. Johnson Co., 1337 Mission St., San Francisco.

STEEL AND IRON—STRUCTURAL

Central Iron Works, 621 Florida St., San Francisco.

Herrick Iron Works, 18th and Campbell Sts., Oakland.

Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.

Judson Mfg. Co., 817-821 Folsom St., San Francisco.

Mortenson Construction Co., 19th and Indiana Sts., San Francisco.

Pacific Rolling Mills, 17th and Mississippi Sts., San Francisco.

Palm Iron & Bridge Works, Sacramento.

Ralston Iron Works, 20th and Indiana streets, San Francisco.

Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.

Western Iron Works, 141 Beale St., San Francisco.

STEEL LUMBER

The General Fireproofing Company, 20 Beale Street, San Francisco

STEEL ROLLING DOORS

Kinnear Rolling Steel Doors, sold by Pacific Building Materials Co., Underwood Bldg., San Francisco.

Wilson Rolling Steel Doors, the J. G. Wilson Corporation, 621 North Broadway, Los Angeles and Waterhouse Wilcox Co., 523 Market St., San Francisco.

STEEL SASH

Bayley-Springfield solid steel sash, sold by Pacific Materials Co., 525 Market St., San Francisco.

"Fenestra" Solid Steel Sash, manufactured by Detroit Steel Products Co., factory sales office, 251 Kearny St., San Francisco.

Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.

U. S. Metal Products Company, 330 Tenth St., San Francisco.

Truscon Steel Company, 709 Mission St., San Francisco.

STEEL TANKS

Main Iron Works, 1000 Sixteenth Street, San Francisco.

STEP AND WALK BRICK

California Brick Company, 604 Mission St., San Francisco.

United Materials Co., Sharon Bldg., San Francisco.

STONE

Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana.

STREET LIGHTING EQUIPMENT

Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

STUCCO, COMPOSITION

California Stucco Co., Holbrook Building, San Francisco.

Hoff Magnesite Co., San Francisco. Miller & Alf, 337 Monadnock Bldg., San Francisco, general agents.

STUCCO-PLASTER REINFORCEMENT

National Steel Fabric Company, A. C. Rulofson Co., Pacific Coast Sales Managers, Monadnock Building, San Francisco.

STUDDING—FIREPROOF STEEL

The General Fireproofing Company, 20 Beale Street, San Francisco

SWITCHES AND SWITCHBOARDS

Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco

Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

TELEPHONES—AUTOMATIC

P-A-X System, represented by Direct Line Telephone Company, 37 California Street, San Francisco.

TELEPHONE SYSTEMS

Direct Line Telephone Co., 37 California Street, San Francisco.

"Connecticut" Intercommunicating Telephones, Myers & Schwartz, 71 New Montgomery St., San Francisco.

"Stromberg-Carlson Telephones," Garnett Young & Company, 612 Howard St., San Francisco.

THEATER AND OPERA CHAIRS

C. F. Weber & Co., 365 Market street, San Francisco.

W. & J. SLOANE

216-228 SUTTER STREET

SAN FRANCISCO

Phone: GARFIELD 2838

LINOLEUMS
WINDOW SHADES
CARPETS
FURNITURE

WESIX ELECTRIC HEATING SYSTEMS
FOR HOTELS, APARTMENTS, PUBLIC BUILDINGS, RESIDENCES
W. WESLEY HICKS, Manufacturer
Rialto Building Tel. Doug. 1187 San Francisco

ARCHITECTS' SPECIFICATION INDEX—Continued

Western States Seating Co., 133 Kearny St., San Francisco.

THERMOSTATS FOR HEAT REGULATION
Johnson Service, Rialto Bldg., San Francisco.

TILES FOR FLOORS, MANTELS, ROOFS
Cannon & Co., Sacramento; and 77 O'Farrell St. San Francisco.
Gladding, McBean & Co., Crocker Bldg., San Francisco.
Livermore Fire Brick Works and California Brick Company, 604 Mission St., San Francisco.
S. & S. Tile Co., 4th and Carrie Streets, San Jose.

TRAVELING CRANES
Cyclops Iron Works, 837 Folsom St., San Francisco.

VALVES—PIPES AND FITTINGS
Crane Radiator Valves, manufactured by Crane Co., Second and Brannan Sts., San Francisco.
Grinnell Co., 453 Mission St., San Francisco.
O. M. Simmons Co., 115 Mission St., San Francisco.
H. Mueller Mfg. Co., 1072 Howard St., San Francisco.
Kennedy Valve Mfg. Co., 23-25 Minna street, San Francisco.

VALVE PACKING
N. H. Cook Belting Co., 317 Howard St., San Francisco.

VARNISHES
Bass-Hueter Paint Company, Mission, near 4th street, San Francisco, and all principal Coast cities.
W. P. Fuller Co., all principal Coast cities.
R. N. Nason & Co., San Francisco, Los Angeles, Portland and Seattle.
Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

VENEERS AND VENEERED PANELS
White Brothers, 5th and Brannan Streets, San Francisco.

VENTILATORS
H. H. Robertson Co., represented on the Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

VITREOUS CHINAWARE
Pacific Sanitary Manufacturing Company, 67 New Montgomery St., San Francisco.
West Coast Porcelain Manufacturers, Wells Fargo Building, San Francisco.

WATERPROOFING (See Damproofing)
Medusa Waterproofing, manufactured by Sandusky Cement Co., Cleveland, Ohio. Carried in stock and sold by leading building supply dealers in California, Oregon and Washingt
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

WALL BEDS—SEATS, ETC. (See Beds)

WALL BOARD
"Amiwud" and "Pabco," manufactured by The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
"Campo-Board," White Brothers, distributors, 5th and Brannan Streets, San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.

WALL PAINT
Nason's Opaque Flat Finish, manufactured by R. N. Nason & Co., San Francisco, Portland and Los Angeles.

WALL PAPER AND DRAPERIES
The Tormey Co., 681 Geary St., San Francisco.
W. & J. Sloane, 216-228 Sutter St., San Francisco.
Uhl Bros., San Francisco.

WARDROBES, SCHOOL
W. L. Evans, 700 Block B., Washington, Indiana
James G. Wilson Corporation, 11 East 36th St., New York and Los Angeles.

WATER SUPPLY SYSTEMS
Kewanee Water Supply System—Simonds Machinery Co., agents, 117 New Montgomery St., San Francisco.

WATERPROOFING
U. S. Elaterite Products Co. of the Pacific, American National Bank Building, San Francisco.

WHEELBARROWS—STEEL
Western Iron Works, Beale and Main Sts., San Francisco.

WHITE ENAMEL
"Gold Seal," manufactured and sold by Bass-Hueter Paint Co. All principal Coast cities.
"Silkenwhite," made by W. P. Fuller & Co., San Francisco.
"Satinette," Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., 34 First St., San Francisco, Los Angeles, Portland and Seattle.

WINDOW SHADES
W. & J. Sloane, 216 Sutter street, San Francisco.
D. N. & E. Walter, 562 Mission street, San Francisco.

WINDOW SASH CHAIN
The Smith & Egge Mfg. Co., Bridgeport, Conn. Coast agents, Rawlins & Smith, 604 Mission St., San Francisco, and 618 American Bank Building, 2nd and Spring Sts., Los Angeles.

WINDOWS, REVERSIBLE, CASEMENT, ETC.
Hauser Window Co., 1362 Harrison St., San Francisco.
J. G. Wilson Corporation, 621 N. Broadway, Los Angeles; Waterhouse-Wilcox Co., Underwood Bldg., San Francisco.
Critall Casement Window Company, Detroit; Waterhouse-Wilcox Company, agents, 523 Market St., San Francisco.

WIRE, ELECTRICAL
Garnett Young & Company, 612 Howard St. San Francisco.
Electric Appliance Company, 809 Mission St., San Francisco.
"Lowell" Rubber Covered Wire sold by Myers & Schwartz, 90 New Montgomery St., San Francisco.

WIRE FENCE
Standard Fence Co., 245 Market street, San Francisco; and 310 12th street, Oakland.

GLOBE AUTOMATIC SPRINKLERS
Will protect your building and business from destruction by fire and reduce your Insurance Rate. Write for estimates.
Pacific Fire Extinguisher Company
FIRE PROTECTION ENGINEERS
424-440 Howard Street, San Francisco Manufacturing Plant, 298 Fremont St.

America Is Still Short Over One Million Homes.
—*Literary Digest*

Oak floors are laid throughout "The Perfect House," Glen Ellyn, Ill., shown below, with the living room at the left, now being featured in motion picture houses throughout the United States, under the title, "The Great Idea."

IF the home now has old-fashioned carpeted softwood floors, it can be modernized by ¾ inch oak flooring, laid right over the old floor. The work may be done one room at a time, if convenient, at a cost less than the old floor, plus carpet. The floors will then be sanitary, with no carpets or cracks to collect dirt and disease germs. Housework will be reduced, as endless sweeping is no longer necessary to keep an oak floor bright and clean.

See our catalog in Sweet's, Page 481, Seventeenth Edition

Put your flooring problems up to our experts. We will gladly serve you.

Oak Floors throughout

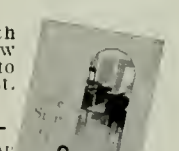
—for permanence, character, charm

As guests enter the home, they are welcomed by oak flooring in the hallway, reflecting in its bright polished surface the beauty and variety of figure that characterize oak. Hospitality extends into the living room, comfortable and "home-like" in its appointments, enhanced also by Nature's permanent floors of oak.

In the dining room, too, oak floors finished to harmonize with the coloring of walls and hangings, convey a sense of well-being and enjoyment; in the bed rooms they possess that quiet dignity and charm that invite rest.

All these advantages are lasting, for oak floors improve in mellowness and beauty with the years, and are always modern.

This booklet, with color plates of the new finishes, will be sent to architects on request. Mail the coupon.



OAK FLOORING BUREAU
1036 Ashland Block
Chicago

Please send me your free book, "The Story of Oak Floors."

Name .....

Address .....

OAK FLOORS

NATURE'S GIFT OF EVERLASTING BEAUTY

A WARM AIR FURNACE USING GAS FOR FUEL—

Heating service in a home means continued comfort with reliable and sufficient healthful heat, and no bother or work to get it.

In California climate, gas is the ideal fuel, perfectly adapted to the heating requirements; heat is available at any time and at any degree or quantity.

A warm air furnace burning gas fuel can be selected to economically heat any home or building. It minimizes the fire hazard too.

PACIFIC GAS AND ELECTRIC COMPANY

P·G·and E·

"PACIFIC SERVICE"

294-1023

Nonpareil Corkboard Insulation

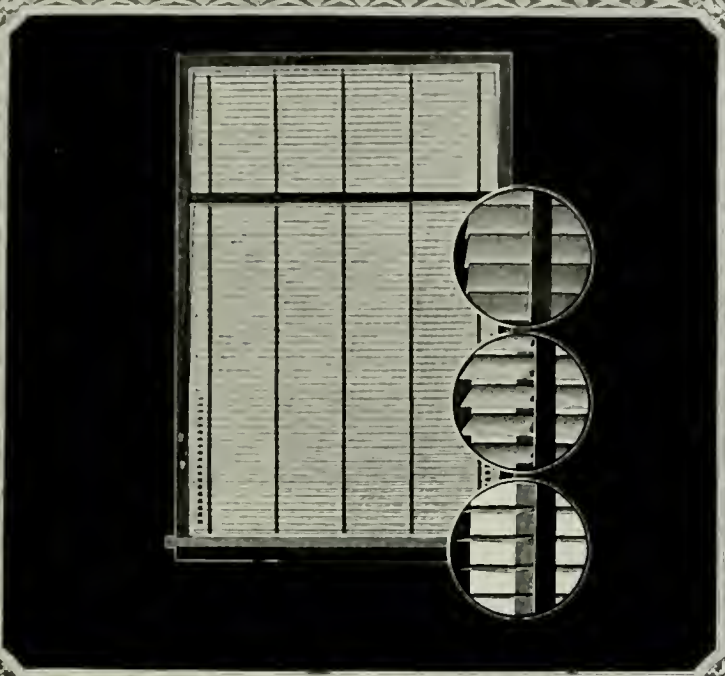
for Cold Storage Rooms

ESTIMATES FURNISHED FOR
COMPLETE ERECTION

VAN FLEET FREEAR COMPANY

557 HOWARD STREET
SAN FRANCISCO

1231 BROADWAY
FRESNO



BECAUSE leading architects everywhere have approved this modern window equipment which eliminates glare from the sun, regulates distribution of daylight, and permits perfect ventilation, more than 3000 banks and more than 500 office buildings throughout America have been equipped with Western Venetian Blinds.

Write for Bank and Office Building Catalogs

WESTERN BLIND & SCREEN COMPANY

General Offices, Los Angeles: Factories, Los Angeles and Kansas City

New York City, N. Y. Chicago, Ill. Kansas City, Mo.
San Francisco, Cal. Atlanta, Ga. Portland, Ore.
Texas Agents: Two Republics Sales Service, Dallas and San Antonio

Western Venetian Blinds

MORE LIGHT ~ MORE AIR ~ LESS GLARE

E. B. Noble, President
A. E. Wilkins, Vice-Pres.

Beam, Angle, Channels, and Universal Mill Plates for immediate shipment from stock

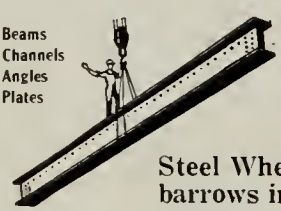
Pacific Rolling Mill Co.

SUPPLIERS OF

FABRICATED STRUCTURAL STEEL, Forgings
Bolts, Rivets, Frogs, Switches, Cast Iron Castings

General Office and Works
17th and MISSISSIPPI STS., SAN FRANCISCO
Telephone Market 215

W. B. MORRIS, Pres. H. H. MORRIS, V.-P. L. J. GATES, Sec.

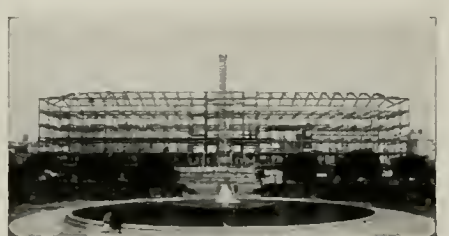


Steel Wheelbarrows in Stock

Western Iron Works

STRUCTURAL IRON AND STEEL CONTRACTORS

141-147 Beale St. and 132-148 Main St. SAN FRANCISCO
Phones: GARFIELD 2575—2576



Bliss & Faville, Architects

Steel Frame, California State Building, Civic Center, San Francisco.

FABRICATED BY

THE PALM IRON AND BRIDGE WORKS (Incorporated)

15th and R Streets, Sacramento

WESTERN ASBESTOS MAGNESIA CO.

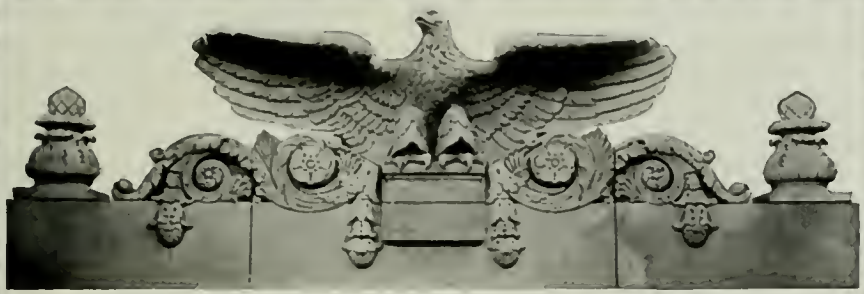
INSULATING ENGINEERS AND CONTRACTORS

CELOTEX
INSULATING LUMBER

PLASTER BASE
INSULATOR
SOUND DEADENER
ACOUSTIC CORRECTOR

Asbestos and Asphalt Slate Shingles and Roofings
Asbestos and Composition Roofings—Roof Coatings
Magnesia and Asbestos Pipe and Boiler Coverings
Cold Storage Insulation—Sectional Expansion Paving Joint
"Linofelt" Sound Deadener—Wall Board
Cork Pipe Covering, Board and Granulated Cork

21-29 South Park
Bet. 2nd and 3rd Sts.
Telephone Douglas 3860
San Francisco, Cal.



Carved Eagle over entrance to London Guarantee and Accident Building, Chicago.
Alfred S. Alschuler, Architect

Vigor and Power Expressed in Stone

Indiana Limestone is a singularly suitable medium for sculptural treatment. It has no limitations. It is exceptionally fine-grained and may be worked with the utmost ease. At the same time it has the peculiar quality of hardening under exposure to the air and holds arrises *permanently.*

Above is illustrated carved eagle which forms central entrance feature of the new London Guarantee and accident Company building, Chicago. It is 14 feet tip to tip of wings and is carved from a single block of Indiana Limestone.

Our handsomely illustrated booklet on bank building will be sent free upon request

Indiana Limestone Quarrymen's Association
Box 770, Bedford, Indiana
Service Bureaus in New York and Chicago

INDIANA
LIMESTONE
The NATION'S BUILDING STONE

Steam Heating and Ventilating

For Commercial and Public Buildings

Furnace Heating for the Home

Mangrum & Otter, Inc.

827-831 Mission Street San Francisco, Cal.

Phone Kearny 3155

FOR PERFECT ILLUMINATION

Specify Solar Lighting Fixtures

The most efficient commercial lighting unit on the market for diffusion and quality of light. A wide range of types from plain commercial to ornamental strap iron designs are carried in stock.

Write for Booklet Showing Complete Line

D. DIERSSEN COMPANY

20 Second Street San Francisco

SAFETY RELIABILITY ECONOMY

The three dominant factors in specifying elevators

Pacific Elevators are always safe, and the many installations is proof of their reliability. Alternating current driven elevators are fully as satisfactory as direct current driven machines for high-speed installations, and the cost of power and upkeep is much lower.

Estimates Cheerfully Given

Pacific Elevator & Equipment Company

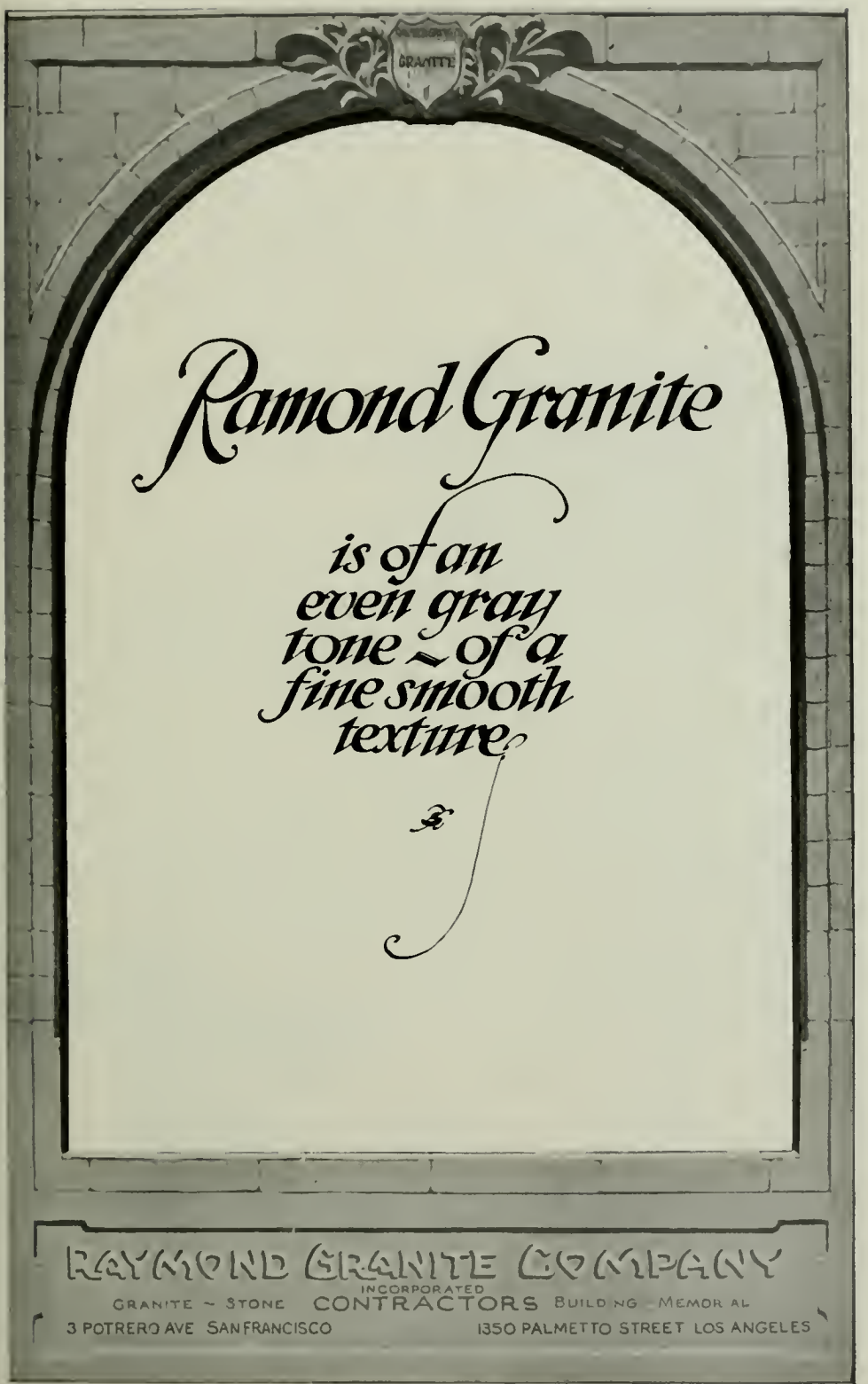
1129-31 HOWARD STREET SAN FRANCISCO, CALIF.

MANUFACTURERS OF A. C. & D. C. ELEVATORS—PASSENGER OR FREIGHT

DETROIT STEEL PRODUCTS CO., Detroit

251 Kearny Street, San Francisco Phone Sutter 1250

Pacific Coast Branch Factory at Emeryville


GRANITE
Ramond Granite
is of an even gray tone ~ of a fine smooth texture
RAYMOND GRANITE COMPANY
INCORPORATED
GRANITE ~ STONE CONTRACTORS BUILDING ~ MEMORIAL
3 POTRERO AVE SAN FRANCISCO
1350 PALMETTO STREET LOS ANGELES

When It's Dry One Day and Damp the Next

THAT you'll admit is a test for any wood. But imagine the effect on a poorly made rolling partition. Hundreds of narrow wood slats that must fit and run true in their grooves if the partition is to be usable when wanted.

You have to be sure that a rolling partition is proof against warping, twisting or buckling.

That is just what one half century of specializing and over 30,000 contracts assure you.

That and the fact that you get sound-proof easily movable partitions that turn one room into many, many into one.

We have a catalogue full of suggestive hints on the various uses of rolling partitions.

A copy is yours for the asking.

The J. G. WILSON Corp.
1 East 36th St., New York City
Offices in all Principal Cities

Established 1876
Wilson
DOORS - PARTITIONS - BLINDS
WARDROBES
THE J.G.WILSON CORPORATION
NEW YORK CITY

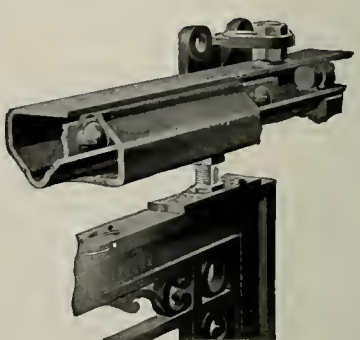
for Service, specify—

McCABE No. 5 Elevator Door Hanger

Simple

Strong

Silent



WRITE FOR OUR "BLUE BOOK"

THE McCABE HANGER MFG. COMPANY

W. H. Steel, Agt.
LOS ANGELES, CAL.

425 W. 25th St.
NEW YORK CITY

More light— less money per opening

Metprodco Reversible and Double Hung Steel Windows are made of the universally acknowledged rust resisting Keystone Copper Steel with slender and graceful solid steel sash members which admit the passage of the maximum of light. They can be made to conform with any type of architecture. Both windows are approved and labeled by the Underwriters Laboratories.

You won't go wrong—

by ordering or specifying Pacific Flat Section Steel Sash. Made to meet the popular demand for a well constructed sash for less money. Furnished with reversible or pivoted ventilators; or with hinged casements.

"PACIFIC COAST PRODUCTS"

UNITED STATES METAL PRODUCTS CO.

330 Tenth St., San Francisco, Calif.
Lumber Exchange, Seattle, Wash.
Exchange Bldg., Portland, Ore.
Bank of Italy Bldg., Los Angeles, Calif.
Paulsen Bldg., Spokane, Wash.
Provident Bldg., Tacoma, Wash.

FULLER FLOOR PRESERVATIVE

FOR MAGNESITE AND OTHER FLOORS

Fuller Floor Preservative fills a long felt need for a finish that would be thoroughly effective as a floor preservative yet one of low cost.

When used on Magnesite or Concrete Floors it thoroughly seals the surface, rendering it proof against oil, grease and water.

Surfaces thus protected will not powder and will not easily stain. They can be washed as often as necessary without any harmful effects and always look bright and clean. Fuller Floor Preservative is very light in color and is therefore strongly recommended for natural maple and other floorings of light shades.

It is quickly and easily applied and dries hard overnight. The low cost of this product is strongly in its favor, particularly where large surfaces are to be finished.

FULLER

PAINTS Since '49 **VARNISHES**

SAN FRANCISCO
OAKLAND
SACRAMENTO
STOCKTON

LOS ANGELES
HOLLYWOOD
PASADENA
LONG BEACH

SAN DIEGO
SANTA MONICA
SAN BERNARDINO
SANTA ANA
FRESNO

PORTLAND
BOISE
WALLA WALLA
SALT LAKE CITY

SEATTLE
TACOMA
SPOKANE
YAKIMA

When writing to Advertisers please mention this magazine.

BOWSER

Whether it is big installation or small, whether it is private or public garage, railroad, factory or dry cleaning plant, always specify Bowser equipment for oils and gasoline. You are assured of best service.

Our engineers will gladly serve you in planning the housing of gasoline and oil equipments.

Write to nearest Pacific Coast office for booklet A-03, and get the facts.

TANKS DEPENDABLE PUMPS

BOWSER 1885

Sales and Service Offices and Representatives Everywhere
612 Howard St., San Francisco

Pump and Tank Headquarters
Fort Wayne, Indiana
722-3 New Bank of Italy Building, Los Angeles

Why Take a Chance? An Investment With Protection is Better Than a Risk

YOU are taking a big chance if your building has unprotected window openings. It is not only constantly threatened by the buildings adjoining, but a fire within is quite likely to burst out of one window and re-enter through another. Recent fires have demonstrated this danger.

Kinnear Steel Rolling Shutters are not an experiment; they have been through the fire test and have made a wonderful record. Why take a chance when you can turn a risk into an investment?

Our illustrated book, "Exposure Hazard and Window Protection," tells about the protection and the investment. A copy will be sent upon request.

KINNEAR ROLLING · DOORS

THE KINNEAR MANUFACTURING COMPANY
661-671 FIELD AVENUE
COLUMBUS, OHIO

Follow Through

That's the test for a punch, a golf stroke or a business understanding. This organization prides itself on the thorough attention it gives to each step of the job until it is finished. Here's a "follow through" that architects and builders hereabout have come to rely upon for steel bar fabrication and installation.

GUNN, CARLE & CO.

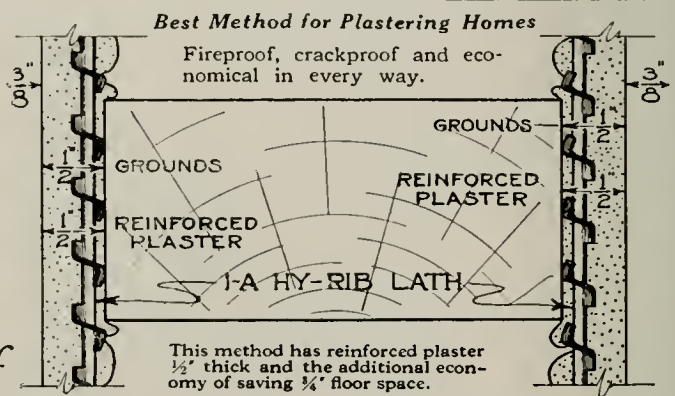
444 MARKET STREET, SAN FRANCISCO

Phone
Sutter 2720

Make the home fireproof

Best Method for Plastering Homes

Fireproof, crackproof and economical in every way.



This method has reinforced plaster ½" thick and the additional economy of saving ¼" floor space.

Specify TRUSCON 1-A METAL LATH with ½" grounds which is available at a cost comparable with Wood Lath.

Ask us for detailed information

TRUSCON STEEL COMPANY

Chas. Halloway, Branch Manager

709 MISSION ST. Phone Douglas 7135 SAN FRANCISCO

California
Commercial Union
Building
San Francisco
Geo. W. Kelham, Architect

25,000 Square Yards
ARMCO-INGOT

Herringbone
RIGID METAL LATH

Used on this 16 Story Office Building

Let us tell you the many advantages of
HERRINGBONE

The General Fireproofing Co.
20 Beale Street, San Francisco

Not a substitute for Anything!

But a vast improvement over lath and plaster for lining walls and ceilings

PACIFIC · FIVE PLY
1 SIZED FIBROUS BOARD
2 LAYER OF MINERAL CEMENT
3 WOOD CORE
4 LAYER OF MINERAL CEMENT
5 SIZED FIBROUS BOARD
Which makes it the
FIRE RESISTING, MOISTURE PROOF
PACIFIC FIVE PLY

Manufactured by
NATIONAL MILL & LUMBER CO.
318 Market St. San Francisco

Pacific Five-Ply Board is really lath and plaster in the proper proportions and in convenient form. It is a wood core encased in a fireproof, moisture proof mineral cement, stronger than the best concrete.

By actual tests Pacific Five-Ply Board is far superior to either pulp wall board or plaster board in tensible strength, deflection and resistance to puncture. Will not contract or expand, bulge, warp, crack or crumble; is air tight and fire resistant.

Pacific Five-Ply Board is sawed and worked just as you would handle lumber. It comes in sheets 4 feet wide and in lengths from 6 to 16 feet. It is strong, durable, attractive in appearance, easily installed, sanitary, and economical. Send for descriptive literature.

GOODS OF HM&S QUALITY

This TRADE MARK means much to the conscientious Architect and Builder

It means a satisfied client

High-Grade Plumbing Fixtures

Holbrook, Merrill & Stetson

64 SUTTER STREET
SAN FRANCISCO

Washable Hospital Walls

The Portland Sanitarium, Portland, Oregon
Claussen & Claussen, Architects

In the Portland Sanitarium pictured above, Bass-Hueter Satin Egg-Shell Finish was used throughout on the walls of halls, bedrooms, steam rooms, showers and kitchens. This finish is particularly suited to the walls and woodwork of hospitals because it is absolutely washable. Manufactured by a process exclusive with us, Bass-Hueter Satin Egg-Shell Finish is unequaled in appearance and hygienic qualities. It comes in white, and colors that are not affected by lime or alkali.

Bass-Hueter Satin Egg-Shell Finish

has also been used in the following hospitals:

Multnomah County Hospital, Portland, Oregon.
Swedish Hospital, Seattle, Wash.
Stanford University Hospital, San Francisco, Calif.
St. Luke's Hospital, Centralia, Wash.
Hahnemann Hospital, San Francisco, Calif.
Union Iron Works Hospital, San Francisco, Calif.
St. Mary's Hospital, Reno, Nevada.

Write for our architectural folder, giving further information on Egg-Shell Finish for hospitals, homes and public buildings.

BASS-HUETER PAINT CO.

SAN FRANCISCO

LOS ANGELES SEATTLE

PORTLAND TACOMA OAKLAND
HOLLYWOOD FRESNO PASADENA
LONG BEACH SANTA ANA HONOLULU, T. H.

Specify HANDY FLUSH VALVES

It is NON-CLOGGING

It functions perfectly with any make or kind of bowl.
Gives perfect cleansing flush — washes bowl clean.

Model A—Indirect Flush: For residences served by one-half inch supply pipe.

Model B—Direct Flush: For hotels, office and other buildings served with three-quarter inch or larger supply pipe.

Write for complete catalogue.

HANDY SELF-CLEANING FLUSH VALVE CO.
731 FOLSOM STREET, SAN FRANCISCO, CAL.
Demonstration in Universal Exhibits Monadnock Bldg., San Francisco

ALL CAST IRON—3 Sizes (3, 5, and 7 Sections)

RA-DO FUMELESS GAS RADIATORS

The Ideal "Year-Round" Heating System
For The Home—New or Old

Easiest and Cheapest to Install
Lowest Operating Cost

POTTER RADIATOR CORPORATION
5954 Pasadena Ave., LOS ANGELES
393 Sutter St., SAN FRANCISCO
1700 San Pablo Ave., OAKLAND

POWER AND HEATING BOILERS

STEEL TANKS, STACKS, BREECHINGS, SHEET AND PLATE WORK
MACHINERY AND IRON CASTINGS

MAIN IRON WORKS

Main Office and Works: 7th, DAGGETT AND 16th STS. San Francisco, Calif.
Telephone Market 752-753

PUMPING MACHINERY

"AMERICAN-MARSH"
House, Sump *and*
Fire Pumps

FOR ALL SPECIFICATIONS

SIMONDS MACHINERY CO., 117-121 New Montgomery Street
PHONE KEARNY 1457 SAN FRANCISCO

Building for the MUTUAL CREAMERY COMPANY, Fourth Ave. and E. 11th St., OAKLAND
A. W. SMITH, Architect P. C. KNUDSEN, Masonry Contractor

A Permanent Investment!

When the Architect specified

Richmond Face Brick

for this modern milk plant, he had in mind the enduring qualities of this material. Beauty and economy were also factors in influencing its use. Figured over a period of years

Richmond Face Brick

is more satisfactory than almost any other material, regardless of price.

Richmond Pressed Brick Co.
Richmond

Los Angeles Pressed Brick Co.
Los Angeles

United Materials Company
Northern California Distributors
SHARON BUILDING, SAN FRANCISO

1. The Wayne is the original and only thoroughly developed Rapid-Rate System of Water Softening.
2. It possesses the highest rate of softening activity.
3. It regenerates efficiently with a brine contact period of less than five minutes.
4. It may be completely regenerated, —all operations, backwashing, salting, reflushing, — in twenty minutes.
5. Per unit of capacity, it requires the least space.
6. It possesses a flexibility of performance that reduces storage requirements to a minimum, or eliminates storage entirely.

The Wayne Water Softener fits the hour to hour, or day to day requirements for soft water with such flexibility as to prevent sacrifice of capacity or waste of salt. It takes the least time and attention of the operator.

It is sold at a reasonable price consistent with the use of the best materials, the best designs, and the best of business methods. It is thoroughly standardized in construction and performance. It is unquestionably the leader in its field.

Way

Symbol of Satisfaction

Assure Soft Water for Buildings You Design

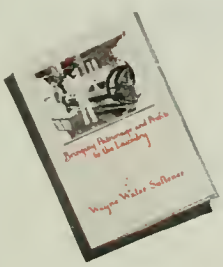
Soft water is now being demanded for office buildings, factory buildings, institutions, and homes, in many sections of America.

The many advantages of the Wayne Water Softener and the fact that it is manufactured and completely guaranteed by the strongest company in this field, is everywhere winning preference for Wayne.

The first reason for the installation of a Wayne Softener, is, of course, the remarkable economy of soft water. In hotels, hospitals, institutions, where much linen is used, the 100 per cent soft water supplied by a Wayne Softener cuts costs of linen replacements from one-third to one-half every year.

Another important economy is in the saving of coal, due to the elimination of boiler scale, inevitably left by hard water, but entirely absent when soft water is used. One-sixteenth inch of boiler scale means the waste of one carload of coal in eight.

Hard water clogs hot water pipes with lime deposit. Wayne softened water removes lime deposit already accumulated and keeps the pipes free from it, thus saving costly plumbing replacements.



The Wayne Softener thoroughly standard booklet of specifications for architects and engineers is now ready for your files. Send for it today and be ready to give your clients concrete facts about the advantages of soft water and the low cost of a Wayne Installation

Wayne Tank & Pump Company
862 Canal Street, Ft. Wayne, Ind.
Wayne Tank & Pump Company of Canada, (Limited)
Toronto, Ontario, Canada
Wayne Tank & Pump Co., 9 Kingsway, London, W. C. 2, England

Division Offices in: Atlanta, Birmingham, Boston, Chicago, Cincinnati, Cleveland, Columbus, Dallas, Dayton, Des Moines, Detroit, Indianapolis, Jacksonville, Kansas City, Milwaukee, Minneapolis, New York, Omaha, Peoria, Philadelphia, Pittsburgh, San Francisco, St. Louis and South Bend

Warehouses in: Philadelphia and San Francisco

An International Organization With Sales and Service Offices Everywhere

REG. U.S. TRADE MARK

Wayne equipment is manufactured completely in one plant and every phase of its operation is backed and guaranteed by the largest institution in the world producing water softeners, with 30 years' experience and a sales and service organization international in scope

Harmonizes with Modern Kitchen Equipment

Fire —

destroyed 1500 homes in Berkeley. Better houses, in many instances, will rise in the ashes of those burned.

Contribute to appearance and comfort of the new home by specifying for the kitchen a

It's Snow White

PETRIUM Sanitary Sink

Every inch is easily cleaned with a moist cloth. Breakage and jarring of dishes reduced to a minimum.

Makes Kitchen Work Quieter

PETRIUM SANITARY SINK CO.

5th and Page Sts. Phone Berkeley 5863 Berkeley, Calif.

Old Mission Portland Cement Company

Each shipment of "OLD MISSION" Portland Cement is guaranteed not only to equal but to surpass all requirements of the standard specifications for Portland Cement as adopted by the U. S. Government and by the American Society for Testing Materials. A Guarantee Certificate is mailed with the bill of lading of each car, giving number of car, date packed, and number of barrels, over the signature of the chief chemist.

8000 SACKS DAILY

SALES OFFICE:

MILLS BLDG., SAN FRANCISCO

PHONE SUTTER 3075

PLANT:

SAN JUAN, CAL.

SAFETY TREADS

UNDERWRITERS' LABORATORIES, INC. INSPECTED ANTI-SLIP TREAD FERALUN AMERICAN ABRASIVE METALS CO. NEW YORK

Affords the maximum of safety and there are NO GROOVES to catch the heels

PACIFIC MATERIALS CO.

525 Market Street, San Francisco, Calif.

PALACE HARDWARE CO.

Good Buildings Deserve Good Hardware

581 MARKET ST.

CORBIN

6063 SUTTER

"San Francisco's Leading Hardware Store"

George S. MacGruer
Robert M. Simpson
} Members of Builders Exchange

MacGruer & Simpson

CONTRACTING PLASTERERS

PLAIN AND ORNAMENTAL

Cement, Stucco and Artificial Stone

Phone Garfield 512

266 Tehama Street, San Francisco

HUBBELL

Single Convenience Outlet, No. 5547
Stamped Brass Flush Plate, No. 5548

Duplex Convenience Outlet
Composition body, No. 5890
Porcelain body, No. 6257
Stamped Brass Flush Plate for either of above, No. 6258

No. 6282, Round Convenience Outlet, Plate $2\frac{3}{4}$" diam.

No. 6283, Round Convenience Outlet, Plate $3\frac{1}{4}$" diam.

Alongside the dressing table
A Convenience Outlet

Clients appreciate thoughtfulness in locating Hubbell Convenience Outlets. When set waist high in the wall near the dressing table, an outlet will find constant use in supplying current for the electric curling iron.

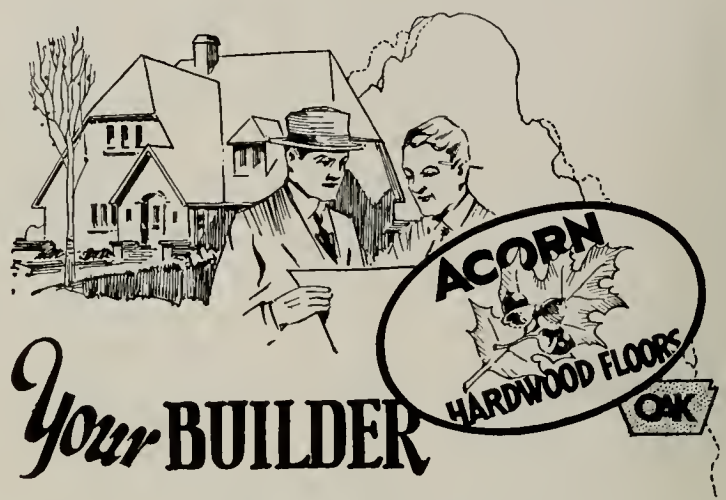
Hubbell Convenience Outlets, both duplex and single, are made with shallow bodies for thin partitions. The double Te Slots accommodate any standard cap, whether the blades be parallel or tandem.

For baseboard outlets the Hubbell Duplex has many advantages. It provides double service with no additional wiring.

We should welcome an invitation from any architect to confer with him with regard to the most advantageous placing of outlets in any class of building.

HARVEY HUBBELL INC
ELECTRICAL WIRING DEVICES
BRIDGEPORT CONN. U.S.A.

HUBBELL ELECTRICAL WIRING DEVICES



Your BUILDER

Ask him for
ACORN FLOORS

NO PART of your new home is more important than the floors. They will be oak, of course, for nothing can really begin to take the place of good American-grown oak for floors, and besides it is the most economical flooring you can buy.

But just asking for oak does not result in satisfaction. The one way to be certain of carefully graded, perfectly milled American Oak Flooring is to ask for the trademarked ACORN Brand. The name stamped on the wood is your guarantee of ACORN quality.

O-3

STRABLE HARDWOOD COMPANY

DISTRIBUTORS

STRABLEWOOD QUALITY HARDWOODS

537 First Street **Oakland, California**

The best varnishes for every purpose

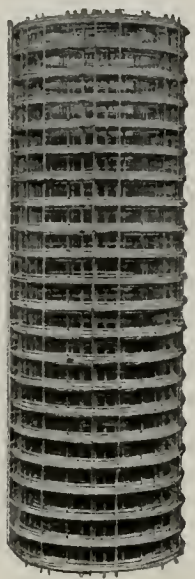
PABCO Varnishes

one of the famous TRADE MARK PABCO PRODUCTS

The PARAFFINE COMPANIES, Inc.

A $12,000,000 Corporation Operating 17 Plants on the Pacific Coast

San Diego **Los Angeles** **San Francisco**
Oakland **Portland** **Seattle**



Clinton

Electrically welded Wire Fabric

The Ideal Mesh Reinforcement for Concrete

Immediate Shipment from Stock
San Francisco
Los Angeles
Seattle

Wickwire Spencer Steel Corporation

SAN FRANCISCO
144 Townsend St.
Douglas 1421

LOS ANGELES
316 E. Market St.
Pico 4851

Recent
Office Buildings

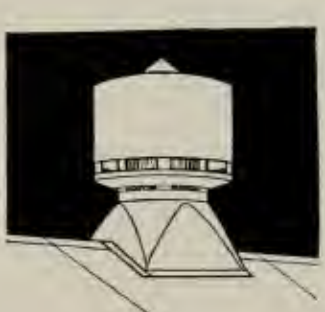
STANDARD OIL
SAN FRANCISCO

MATSON
NAVIGATION CO.
SAN FRANCISCO

CALIFORNIA STATE
LIFE INSURANCE
COMPANY
SACRAMENTO

Lindgren & Swinerton, Inc.

New Standard Oil Building
225 Bush Street
On the Sixth Floor



Robertson Ventilators Pull

Here are the reasons and proof why the Robertson Ventilator is the best manufactured:

150% to 160% more air exhausted through wind action, alone, than through an open pipe.

95% as good as an open pipe where there is no wind

Positively no back draft from winds deflected upward by sloping roofs because of the patented Robertson wind baffle—an exclusive feature.

Send for descriptive pamphlet and price list

H. H. ROBERTSON CO.

H. M. HOLWAY, District Manager
1007 Hobart Building, San Francisco
600 Metropolitan Building, Los Angeles

BIRCHFIELD
REG U.S. PAT. OFF.

Steel Heating Boiler

Let us furnish you with a list of users of Birchfield and then find out for yourself, what saving in fuel you will have a right to expect.

WALKER S. LELAND
208 Balboa Bldg. San Francisco

LARMER & LAUER
Los Angeles

BIRCHFIELD BOILER CO.
Manufacturers, Tacoma, Wash.

St. Genevieve
Golden Vein Marble
In the new Bowery Savings Bank, New York City, York & Sawyer have made full use of the beauty of St. Genevieve Golden Vein Marble.
From its rich buff color, richly marked with veins of gold, they have wrought a design of unusual interest.
It is especially adapted for bank interiors.
Write us for full particulars

TOMPKINS-KIEL MARBLE COMPANY

505 FIFTH AVENUE
NEW YORK CITY

DISTRIBUTORS MARBLE-STONE

CHICAGO
PHILADELPHIA
SAN FRANCISCO

This Veneer Only $300 More Than Stucco

The architect is familiar with the highly satisfactory results that are to be obtained by the use of Dickey Face Brick in remodeling exteriors—but all architects do not, perhaps, realize how moderate in cost is a veneer of Dickey Face Brick.

The stucco on the frame residence shown above having cracked and peeled, the owner was faced with the necessity of applying a new surface.

He was much gratified when he discovered that he could veneer the exterior with Dickey old gold Face Brick for only $300 more than the figure for stucco.

Consider a Dickey Face Brick veneer for your next remodeling commission.

DICKEY

FACE BRICK AND MASTERTILE

Manufactured by Livermore Fire Brick Works — Manufactured by California Brick Company

604 Mission Street, SAN FRANCISCO, *and* Builders Exchange, OAKLAND

25,000 square yards ARMCO-Ingot Iron Herringbone Lath used in walls, ceiling, and partitions. General Fireproofing Co., Youngstown, Ohio, Manufacturers.

Balfour Bldg.

San Francisco

Geo. W. Kelham, Architect

ARMCO-Ingot Iron Lath Protects this Building

Architects specify ARMCO-Ingot Iron Lath for different reasons: It is a fire-resistant approved by the Underwriters of America. It is the rust-resisting iron that withstands the attack of chemical corrosion. It is easy to install. Many actual installations prove that Ingot Iron Lath lasts for many years even when exposed to moisture which penetrates plaster and stucco. This lath is manufactured by General Fireproofing Company, Youngstown, Ohio.

Where to order ARMCO-Ingot Iron sheets: San Francisco Warehouse, Tenth and Bryant Sts.; California Cornice Works, Los Angeles; A. M. Castle Co. of Washington, Seattle; Spokane Sheet Metal Supply Co., Spokane.

ARMCO
TRADE MARK
INGOT IRON
Resists Rust

The American Rolling Mill Co.

Middletown, Ohio

EVANS VANISHING DOOR

wardrobes are the practical and efficient installation for the saving of floor space, lowering the cost of construction and upkeep, and making for the convenience and sanitation of the MODERN SCHOOL.

WARDROBES, Class A, made with Panel Backs, Ends and Divisions, and with doors that swing —not slide—on double-pivoted arms, no guides, tracks or rollers, no rattle or squeak; they rate 100 per cent. in conservation of space, easy and noiseless operation, perfect sanitation and ventilation. Doors cannot stick or bind. They move with a touch. Hardware can also be purchased separately.

More Than a Million Hang Their Wraps in Evans Vanishing Door Wardrobes

Trade Mark
VANISHING DOOR
U. S. Reg.

Catalog
"PICTURES THAT TALK"
Sent on Request

700 Block B **W. L. EVANS** Washington, Ind.

Every Room Adds at Least $1,200 to the Cost of a Home or Apartment House

Hotel Cecil, San Francisco
Equipped with Wall Beds

Portal Wall Beds

are real space and cost savers. Those who would build wisely in these days of flunctuating prices, provide for PORTAL WALL BEDS.

MARSHALL & STEARNS CO.

WALL BEDS

"HIGHEST AWARD ALWAYS"

1152 Phelan Building
San Francisco

1774 Broadway
Oakland

CORDOVA ROOF TILE

FURNISHED AND LAID BY

GLADDING, McBEAN & CO.

FOUNDED 1875

CROCKER BUILDING, SAN FRANCISCO

Cordova Roof Tile, the first of LATIN TILES to be manufactured, is the result of a scientific process of mixing and burning clays to give a wide, though harmonious, variation of beautiful color in a strong, dense, and durable tile

TROPICO POTTERIES, INC.
GLENDALE, LOS ANGELES
CALIFORNIA

FESS SYSTEM

The true TURBINE.

READ WHAT ONE OF THE LARGEST REALTY FIRMS ON THE PACIFIC COAST THINK OF OUR EQUIPMENT AND REAL "honest-to-goodness" SERVICE

"We do not hesitate to say that our experience with the Fess Rotary Burner is the most satisfactory in every way. We have had quite a number of the [redacted] Burners in operation and have been satisfactory, although the repairs have been more, due possibly to the fact that they have had several different representatives here in our city and the service behind them has not been as good as that behind the Fess Burner, which have had the same agency for a period of ten or twelve years and has been eminently satisfactory."

218-220 Natoma Street San Francisco

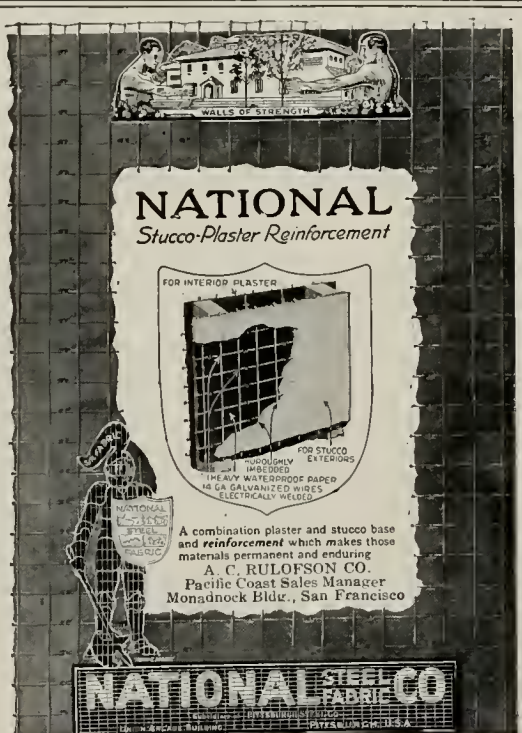
Phones Sutter 6927-6928

SPECIFY AND INSIST UPON FESS SYSTEM

934 Santee Street Los Angeles

Bdwy 1375

AUTHORIZED AGENCIES AND SERVICE IN ALL PRINCIPAL CITIES


WALLS OF STRENGTH
NATIONAL
Stucco-Plaster Reinforcement
FOR INTERIOR PLASTER
FOR STUCCO EXTERIORS
THOROUGHLY IMBEDDED
HEAVY WATERPROOF PAPER
16 GA GALVANIZED WIRES ELECTRICALLY WELDED
A combination plaster and stucco base and reinforcement which makes those materials permanent and enduring
A. C. RULOFSON CO.
Pacific Coast Sales Manager
Monadnock Bldg., San Francisco
NATIONAL STEEL FABRIC CO
PITTSBURGH, U.S.A.

JOHNSON'S ROTARY CRUDE OIL BURNER

Can be installed in any BOILER or FURNACE
Gives Satisfactory Results
Simple to Operate—Automatic—Safe
Let us tell you more about this Oil Burner.

BURNER IN OPERATION

S. T. JOHNSON CO.

1337 Mission Street
San Francisco
Phone Market 2759

940 Arlington Street
Oakland
Phone Piedmont 2815

Agencies: SEATTLE LOS ANGELES FRESNO SAN DIEGO SACRAMENTO

SIMPLEX
TRADE MARK

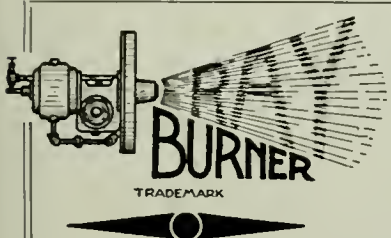
SIMPLEX BURNERS

For High or Low Pressure Boilers, Water Heaters, Kiln Dryers, Furnaces, Etc. Operated by Fractional H. P. Motors. Guaranteed for Efficiency and Durability.

BUNTING IRON WORKS

1215 FIRST NATIONAL BANK BLDG.
Factory Berkeley SAN FRANCISCO Phone Sutter 3225

Member of the Oil Burners Manufacturers' Association of California



Rotary Fuel Oil Burners

FOR HEATING, POWER PLANTS And Industrial Uses

ADAPTED FOR ANY TYPE OF BOILER OR FURNACE —HIGH OR LOW PRESSURE, 6 to 600 h. p.

W. S. RAY MANUFACTURING CO.
MANUFACTURERS OF RAY FUEL OIL BURNERS

OFFICE AND SALESROOM: Distributors in all Principal Cities OAKLAND BRANCH
Rialto Building, SAN FRANCISCO Chicago Factory Branch 25th and San Pablo Avenue
Phone Douglas 8079 720 South Michigan Ave. Phone Oakland 3944

Specify "ROTARY"—the Oil Burner with the Revolving Grate

Produces the highest efficiency in all standard furnaces, either steam, hot water or hot air, because of the short high temperature flame.

ROTARY OIL BURNER COMPANY, Inc.
159-12th STREET, OAKLAND PHONE OAKLAND 2994

Comfort

in the homes you build is assured when you provide for heating with

THE BABCOCK

HIGH EFFICIENCY GAS FURNACE

Operated from a switch on the wall, the Babcock floods the house with healthful, odorless, troubleless heat. No condensation at the joints, no corrosion, no leaks. 5 year guarantee.

Distributors in large cities of California:

FRANK KLIMM CO.
San Francisco
Pacific Gas Appliance Co.
Oakland

BEACON LIGHT CO.
and
Southern California Gas Co.
Los Angeles

C. B. BABCOCK COMPANY

768 MISSION STREET, SAN FRANCISCO
MANUFACTURERS AND DISTRIBUTORS OF GAS EQUIPMENT

Pump Governors
Oil-Burner Governors
Reducing Valves
Safety Valves
Oil Valves
Blow Off Valves

Boiler Feed Valves
Vacuum Pump Governors
VacuumRegulatingValves
Oil Pumping Sets
Little Giant Improved
Oil Burners

Duplex Oil Pumps
Rotary Oil Pumps
Oil Heaters
Draft Gauges
Boiled Feed Pumps

G. E. WITT CO., Inc., Engineers

C. W. VAUGHN, President and Manager

MANUFACTURERS AND DISTRIBUTORS

862-864 Howard St. Phone Douglas 4404 San Francisco, Cal.

A. F. Edwards, Pres.
J. M. Fabbris, Vice-Pres.
J. A. Mackenzie, Secy.

Office Telephone Market 5070

Chas. F. Eisele, Asst. Mgr.
J. Rubiolo, Asst. Mgr.
D. A. Batsford, Asst. Mgr.

AMERICAN MARBLE & MOSAIC CO.

25-59 Columbia Square, San Francisco, Calif.

Near Folsom St., Bet. 6th and 7th Sts.

Factory on Water Front, South San Francisco. Phone South San Francisco 161

When writing to Advertisers please mention this magazine.

the ARCHITECT & ENGINEER

Contents

VOL. LXXV. OCTOBER, 1923 Number 1

PATIO AT NIGHT, COUNTRY HOUSE OF MR. R. S. MOORE, MENLO PARK - - - - - - - - - *Frontispiece*

SOME THOUGHTS ON THE PLANNING OF COUNTRY HOMES 51
Frederick Jennings

THE LOS ANGELES ADMINISTRATION CENTER PROBLEM - 70
Wilbur D. Cook

A LETTER FROM DIRECTOR G. GORDON WHITNALL - - 73

REPORT OF COMPETITION FOR THE BEST DESIGN OF A HOUSE TO COST $5,000 - - - - - - - - - - 75

OPERATING COSTS OF AN ELECTRICAL HOME - - - 81
H. L. Garbatt

FUNCTIONS OF THE ARCHITECT - - - - - - - - 83

ELECTRICALLY CONTROLLED CURTAINS FOR EXPOSITION AUDITORIUM, SAN FRANCISCO - - - - - - - 87
Clarence R. Ward, Architect

CALIFORNIA MEMORIAL STADIUM, BERKELEY - - - 93
A. Huber, Jr.

SOME LUMBERING LOCUTIONS - - - - - - - - 98
E. T. Thurston, C. E.

HOW TO BUILD OUR HOMES SO THEY WILL NOT BURN - 99
Leslie H. Allen

PORTLAND CEMENT STUCCO AND THE SURFACE FINISH OF CONCRETE BLOCK - - - - - - - - - - - 102
Frane J. Gardner

EDITORIAL—WHAT AILS THE ARCHITECT? - - - - - 106

Published Monthly by
THE ARCHITECT and ENGINEER Inc.
626-627 Foxcroft Building San Francisco
W. J. Kieruff, *President* Frederick W. Jones, *Vice-President* L. B. Penhorwood, *Secretary*

PATIO AT NIGHT, COUNTRY HOUSE OF MR. R. S. MOORE, MENLO PARK, CALIFORNIA
ALBERT FARR, ARCHITECT

Frontispiece
The Architect and Engineer
October, 1923

THE
ARCHITECT
AND
ENGINEER

OCTOBER
1923

VOL. LXXV.
No. 1

Some Thoughts on the Planning of Country Homes

By FREDERICK JENNINGS

THE group of suburban houses presented on the following pages are varied solutions of the problem of American homes. These are but studies as it is an admitted fact that there is yet to be a final and completely satisfactory type developed. As to how near the designer has approached his solution, the critic must judge for himself. It is the writer's belief that no startling divergence from the canons of the past will lead to progress in any art, and the consideration of what has been well done, together with the limitations (or requirements of the present day, if you prefer) is the way to our mystery. I am using this latter word as would Samuel Pepys, who solemnly tells us of learning the "Mystery of Measuring Lumber."

It would be well for both critic and student to examine these limitations, (and whoever undertakes to state them in their entirety will probably find himself in the position of the German instrument maker who left his glue pot inside the completed bass viol!). The widely spread belief is that beauty is a matter of legislation and therefore lot reservations, set backs, and prescriptions as to costs of buildings, will solve all of our troubles. It must be confessed that our prize suburbs have an appeal, no matter how varied the architectural styles, of deadly monotony; except in rare cases. I remember while in Pasadena this summer I saw on one of their orderly streets, beautiful because of the shade trees, just at the turn of the roadway, that some rebel against alignment had built a simple and charming rough stone and shingle cottage right on the lot line—a spot of delightful interest.

Consider the Isle of Wight and its villages. No setter-back got his deadly work in here and yet how these cottages do ask for sketching and photography! Or look among your returned tourist friends' kodak trophies and see how far the "Realtor" has determined the building lines of picturesque Europe.

Fixing the beauty of our architecture by cost is like buying pictures by the square foot. How many small cottages have an air of distinction

PATIO, HOUSE OF MR. R. S. MOORE, MENLO PARK
ALBERT FARR, ARCHITECT

PATIO, HOUSE OF MR. R. S. MOORE, MENLO PARK
Albert Farr, Architect

HOUSE OF MRS. F. B. ANDERSON, SAN RAFAEL
Albert Farr, Architect

HOUSE OF MR. H. WARD DAWSON, PIEDMONT
ALBERT FARR, ARCHITECT

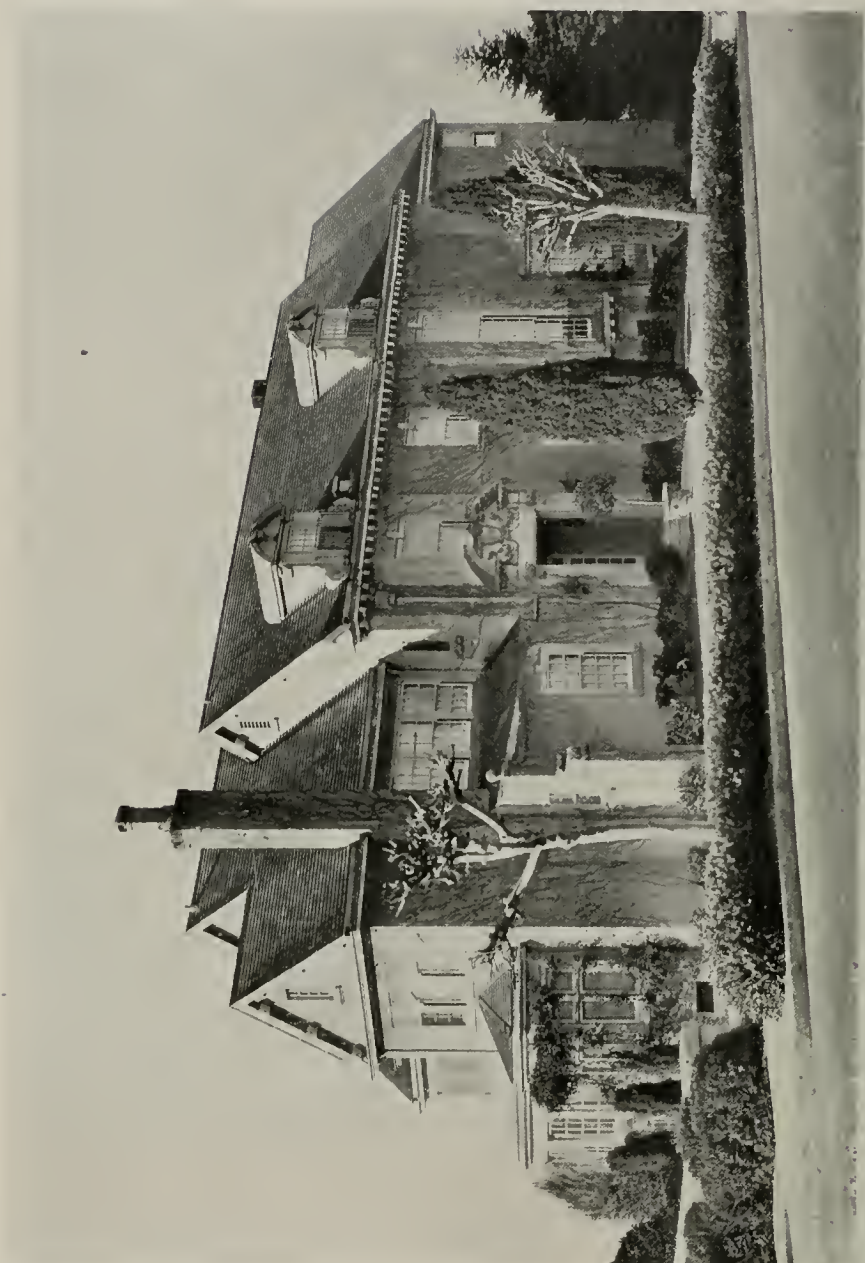
that their larger, more costly neighbors lack? "And the stately mansions of yester-year at fifteen thousand, tomorrow may be thirty or more." Rising costs and scarcity of workmen make this scale impossible. It should be clear that legislation of this type should be left to committees learned in the matter of beauty.

In matters of glorious bathrooms and scrimping elsewhere, I would offer a protest; my grandfather, who was the most spotless of old gentlemen, lived in a pre-revolutionary house with works of art in the way of furniture and Copley portraits but no tile baths, and immaculate everywhere, whereas the modest home of today is designed to be strong

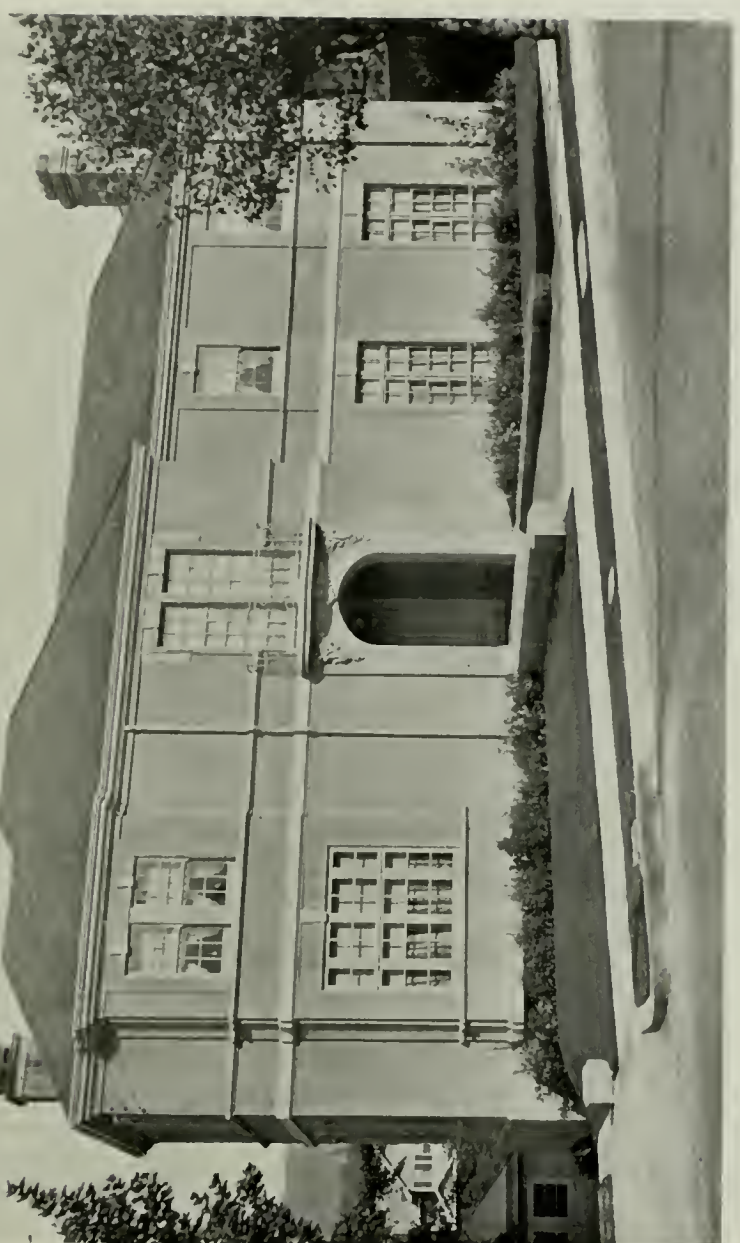
HOUSE OF MR. WALTON N. MOORE, PIEDMONT
ALBERT FARR, ARCHITECT

on plumbing but weak in beautiful things in the places where the owners should enjoy the greater part of their lives. The small boy would greatly enjoy such a home without a tiresome "set-in" bath or basin to hint for the continuous removal of his hardly acquired stigmata of pleasure.

I think we take too much pride in our sanitary theories, though we are the most prodigal of people in our investment of fixtures, for example, the other evening I accompanied a young friend, sometime of the A. E. F. who held forth on the French people, while we were on the railway leading to a great and nearby suburb. "The French are aw-



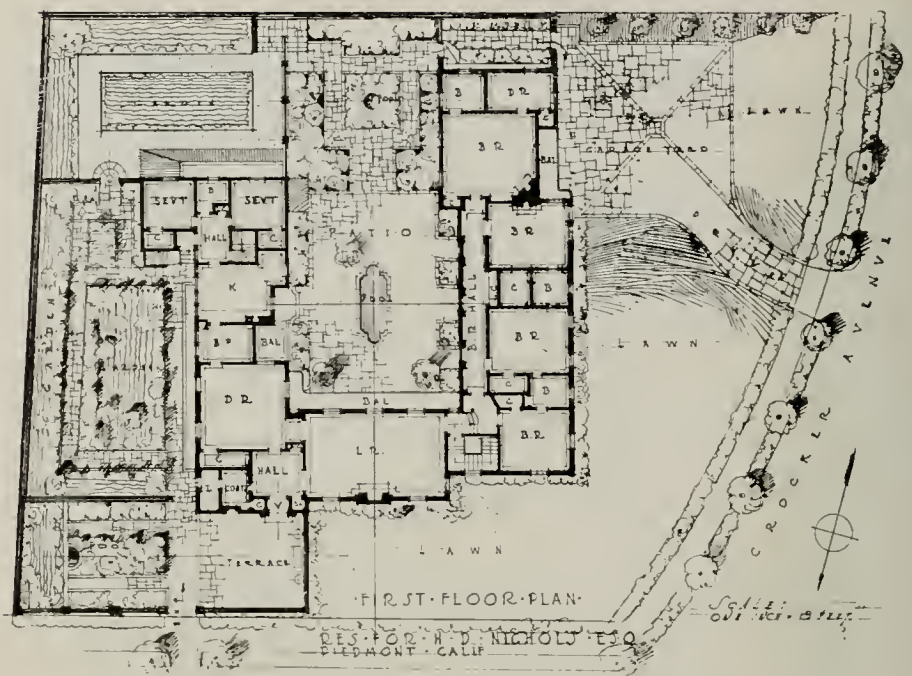
HOUSE OF MR. WALTON N. MOORE, PIEDMONT
ALBERT FARR,
ARCHITECT



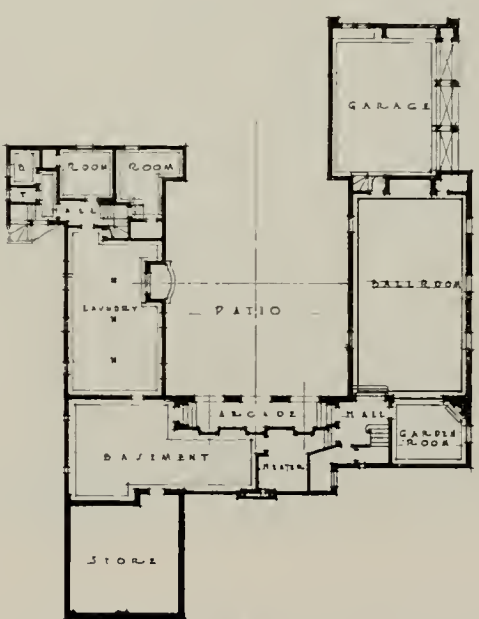
HOUSE OF MR. CHAS. H. BAIN, PIEDMONT, CALIFORNIA
ALBERT FARR, ARCHITECT AND J. F. WARD, ASSOCIATE

HOUSE OF MR. ARTHUR D. KING, PIEDMONT
ALBERT FARR,
ARCHITECT

GARDEN, HOUSE OF MR. ARTHUR D. KING, PIEDMONT
ALBERT FARR, ARCHITECT



FIRST FLOOR PLAN, HOUSE OF MR. H. D. NICHOLS, PIEDMONT
Albert Farr, Architect and J. F. Ward, Associate



BASEMENT PLAN, HOUSE OF MR. H. D. NICHOLS, PIEDMONT
Albert Farr, Architect and J. F. Ward, Associate

HOUSE OF MR. HENRY D. NICHOLS, PIEDMONT, CALIFORNIA
ALBERT FARR, ARCHITECT AND J. F. WARD, ASSOCIATE

PATIO, HOUSE OF MR. E. J. SCHNEIDER, CLAREMONT
ALBERT FARR, ARCHITECT AND J. F. WARD, ASSOCIATE
Horace George Cotton, Landscape Architect

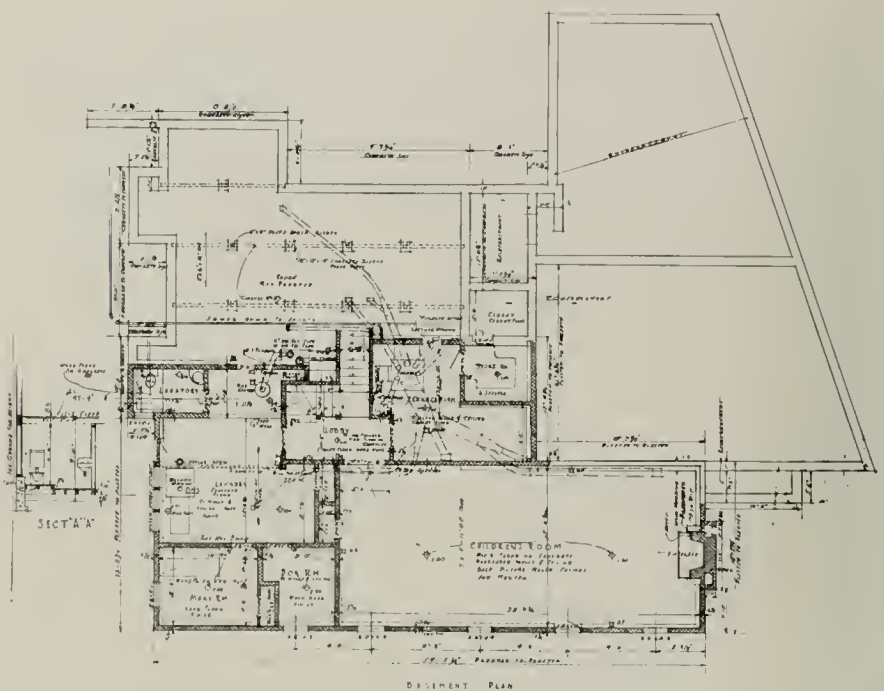
fully insanitary," he said, "for they go into their bedrooms at night and close them tight so no air can get in, and you can imagine the odor in the morning." The tale was most impressive, but lost much of its point, as the outfall of the main sewer of the suburb above referred to, parallels this railway in such manner that the effluvia from it accompanies the passage of all trains at low tide. How many of the great foreign cities poison their marine food in this manner, I wonder?

To the perplexity of the designer is added the growing requirement of planning the garden in connection with the building, and this should

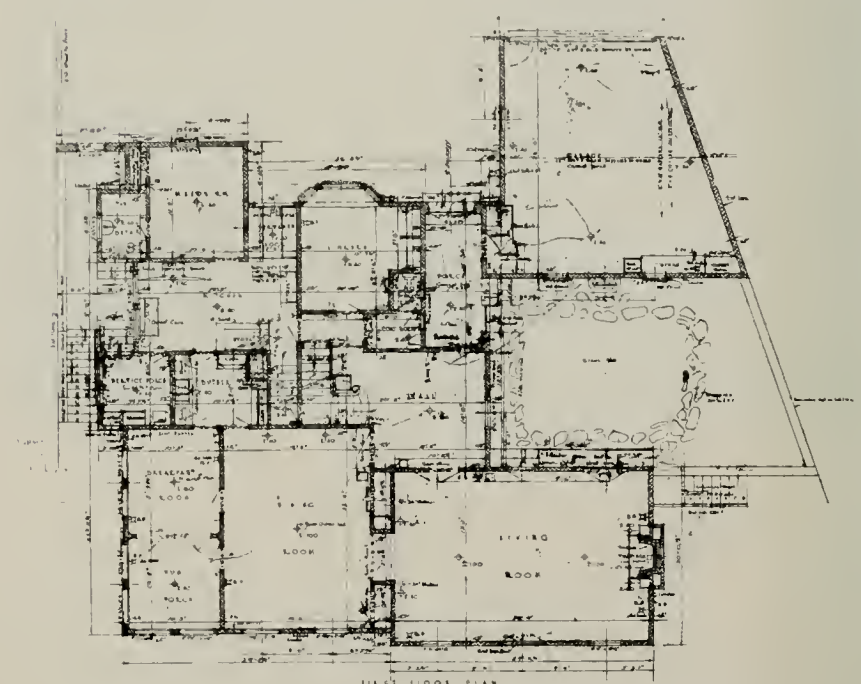
ENTRANCE HALL, HOUSE OF MR. E. J. SCHNEIDER, CLAREMONT
ALBERT FARR, ARCHITECT AND J. F. WARD, ASSOCIATE

be most grateful of his trying tasks. Nothing is more necessary to the solution of the home problem or so pleasurable as the study of soil condition, plants and trees, their habits, method of growth and care.

These and numerous other problems make our home far more complex than those of our ancestors or of Europe, so that direct attempts at transplantation are failures, "Builders' houses" are even worse with their pathetic bulgy columns; nor will houses, spontaneously like Topsy "just grow." We must follow the old bridal rhyme, "something old and something new" and good hard work to amalgamate these.

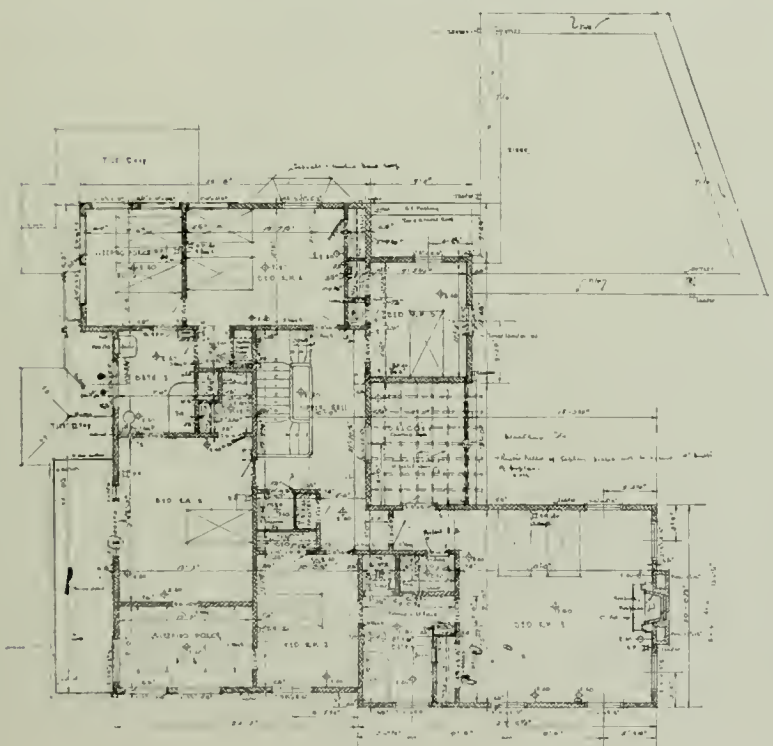


BASEMENT PLAN, HOUSE OF MR. E. J. SCHNEIDER, CLAREMONT
Albert Farr, Architect and J. F. Ward, Associate



FIRST FLOOR PLAN, HOUSE OF MR. E. J. SCHNEIDER, CLAREMONT
Albert Farr, Architect and J. F. Ward, Associate

HOUSE OF MR. E. J. SCHNEIDER, CLAREMONT
Albert Farr, Architect and J. F. Ward, Associate
Horace George Cotton, Landscape Architect

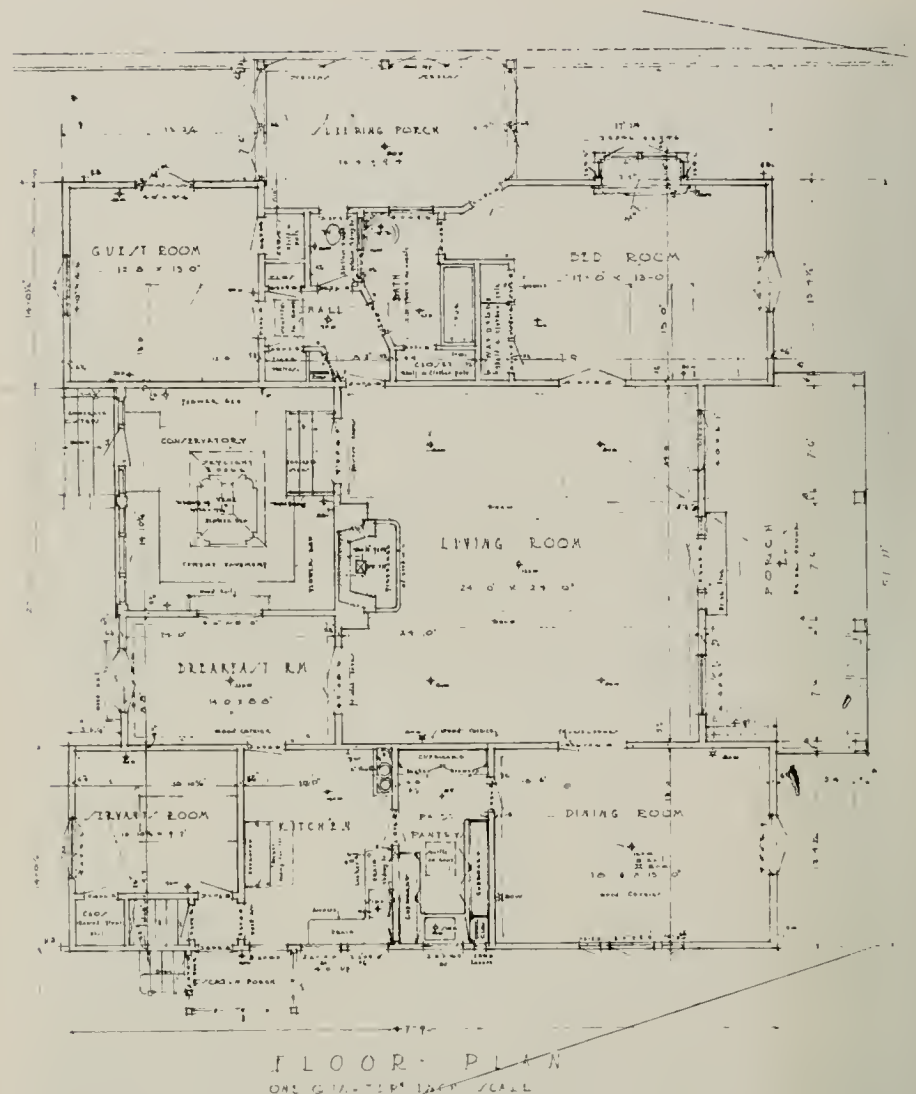


SECOND FLOOR PLAN, HOUSE OF MR. E. J. SCHNEIDER
Albert Farr, Architect and J. F. Ward, Associate

HOUSE OF MRS. ANNIE MOLLER, PIEDMONT, CALIFORNIA
ALBERT FARR, ARCHITECT AND J. F. WARD, ASSOCIATE

GARDEN FRONT, HOUSE OF MRS. ANNIE MOLLER, PIEDMONT
Albert Farr, Architect and J. F. Ward, Associate
Horace George Cotton, Landscape Architect

HOUSE OF MR. HENRY M. HANSEN, SAN RAFAEL
Albert Farr, Architect



FLOOR PLAN

PLAN, HOUSE OF MR. HENRY M. HANSEN
ALBERT FARR, ARCHITECT

HOUSE OF MR. J. S. McCLYMONT, MENLO PARK, BEFORE ALTERATIONS

HOUSE OF MR. J. S. McCLYMONT, MENLO PARK, AFTER ALTERATIONS
Albert Farr, Architect and J. F. Ward, Associate

The Los Angeles Administrative Center Problem

By WILBUR D. COOK of Cook & Hall,
Consultants to the City Planning Commission

THE Architect and Engineer having published two articles on the "Los Angeles Civic Center," our excuse for writing lies in the fact that the readers of these former articles can form a just appreciation of the problem only by a much clearer statement as to the factors involved than was given in the previous articles.

The programme presented to our firm by the City Planning Commission of Los Angeles clearly defined the extent of the site to be considered, and required an adaptation in planning to several existing buildings such as the Federal Post office, the Old Mission and Plaza, the Hall of Records, and the proposed Hall of Justice of such a height and proportion as to be a dominant note in any possible architectural composition. The problem further involved the recognition of a great concentration of travel at this particular site, for which existing streets

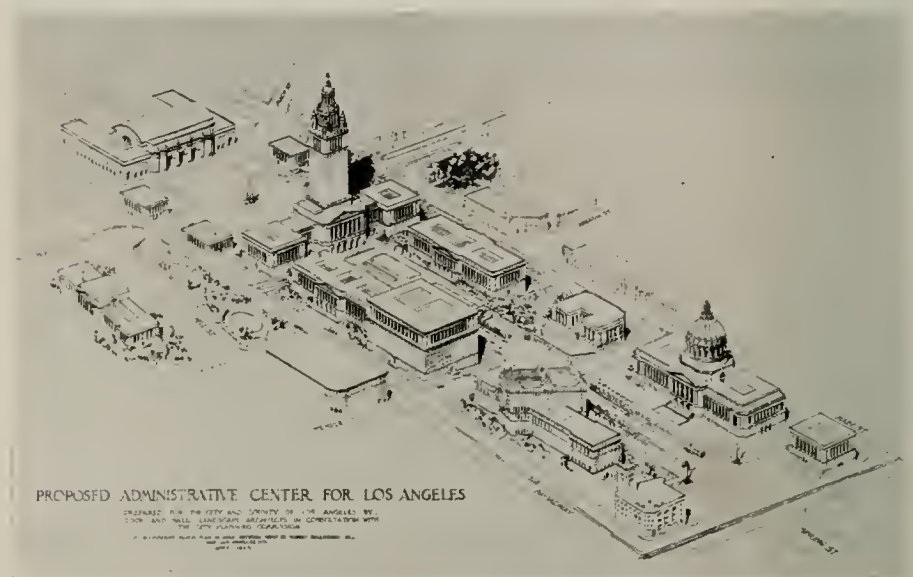


FIG. 1—GRADE ELEVATIONS, ADMINISTRATIVE CENTER, LOS ANGELES
Cook and Hall, Landscape Architects

were inadequate even under present conditions, therefore the problem was vitally concerned with solving the engineering factor of street locations and profiles which would serve the vast concentration of travel collecting at the site and desiring to pass through as expeditiously and safely as could be arranged.

Taking up the engineering factor and street circulation, we reported to the City Planning Commission as follows: "The ideal Administrative Center (and by Administrative Center is meant the intelligent grouping of such buildings as comprise City administration, County administration, and where possible State and Federal) should be so located in the City Plan as to be readily accessible to the public who have business to transact; and yet an Administrative Center should never lie in the midst of traffic confusion. In other words, an Administrative Center having very large and special functions of its own should

be somewhat set apart from ordinary business activity; should be planned to take care of diverse administrative functions expeditiously and efficiently in a location free from the confusion and congestion of city thoroughfares; and yet it **must** be readily accessible to the traveling public from the entire Regional District."

Our block plan of design with grade elevations, (See Figs. 1 and 2) illustrates how closely this ideal has been reached as regards the engineering qualities of accessibility, and as to adequate street circulation and accommodation for traffic, with extensive parking reserves for automobiles as distinct from through streets. This engineering solution of the problem was unanimously approved by the City Planning Commission.

In the August issue of The Architect and Engineer, Mr. Wm. L. Woollett, architect, in writing on the Los Angeles Civic Center, gives as a quotation, "Where there is no vision, the people perish." Mr. Woollett then proceeds to elaborate on his own vision as to a Civic Center.

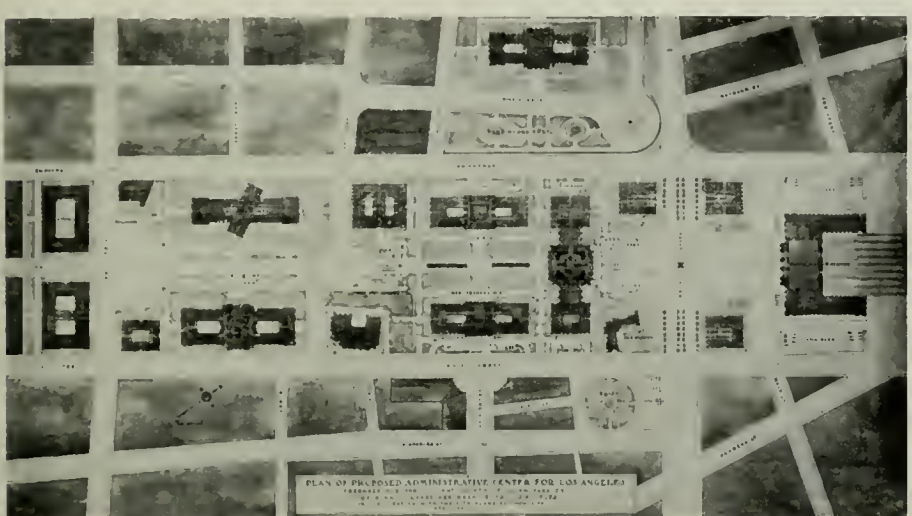


FIG. 2—BLOCK PLAN, ADMINISTRATIVE CENTER, LOS ANGELES
Cook and Hall, Landscape Architects

It is because the City Planning Commission had a vision, a far sighted vision and a practical vision, in which we heartily agreed and have been allowed to share, that we would again quote from our report in describing the aims and functions of our plan: "Taking advantage of the higher elevations that now exist between Temple street and Sunset Boulevard, in the central part of the area now being considered, the scheme of design develops on the Axis of Spring street, an expanding view of the Administrative Center from a point considerably South of First street. This view will be accumulative in its effect as one travels some 1200 feet into the Administrative Center on a street of slightly rising gradient. A few hundred feet North of Temple street, on the axis of Spring street, a double entrance portal of architectural merit would lead into the street subway, with large overhead openings to provide ventilation and sunlight. This subway, some 700 feet in

length would open out on the proposed Sunset Boulevard Plaza, and would provide a great artery for through travel, without in any way creating congestion within the Administrative Center. At an elevation of approximately 23 feet above the subway would lie a Plaza, or Parterre, 300 feet wide and 600 feet long, about which would be grouped in the probable near future a new Federal building, a State building and what we have termed the Courts. The proposed Hall of Justice and the present Federal building would also share by looking out upon this parterre, to become a pleasant concourse for pedestrians having business to transact between the several building groups. It should be mentioned that this parterre would lie at an elevation of approximately 40 feet above Main street, and some 20 feet below the highest point reached on the Broadway profile. We believe this parterre, being free from the noise and confusion of automobiles, when enclosed by buildings of fine architectural composition, will develop an Administrative Center of distinct individuality and great attractiveness.

We have spoken of the aim to create an expanding view of the Administrative Center from the south on Spring street, and would point out that a strong terminal building (The Courts) located some 1800 feet from First street, would become a most impressive note in the picture. The City hall located in a flanking position, would stand as an extremely important factor in the Administrative Center and would be the most impressive building as one entered from the south. With its southern facade overlooking the park like entrance into the center, and with generous lawn and planted foreground in connection with the Spring and Main street facades, the prominence of the City hall site would be secondary to no building in the center. Located in close proximity to First street, Spring street, and Main street, with extensive parking reserves for automobiles as an essential part of the plan, "the accessibility" of the City hall by the traveling public leaves nothing to be desired.

The scheme of the Administrative Center, includes as appropriate adjuncts, the development of a small park overlooking the Administrative Center, and further to the west a proposed City College. The block between Temple and California streets, should be acquired for a large Municipal garage with entrances to five stories from existing streets—this storage space in addition to the basement storage of several of the Administrative Center building groups would adequately serve in providing a functional need for this neighborhood. To the south of First street, it is suggested than an Educational building and a building for Public utilities be built, to complete the architectural composition of a comprehensive Administrative Center. The possible Union Station site, as shown, is, in the judgment of many students of our transportation problem, most desirable, but whether or not the station is ever built at this site, the creation of Sunset Boulevard Plaza is an essential part of the City Plan."

Referring to the June issue of The Architect and Engineer, there appears on page 65 in connection with a discussion on the Los Angeles Civic Center, an illustration entitled "Architectural Composition, Proposed Civic Center, Los Angeles" By Franz Herding, and stated to be based on layout by Cook and Hall. Inasmuch as this conception by Mr. Herding did not conform to the programme of retaining the Federal Post Office and the Hall of Records, we would point out that it cannot be accepted as an interpretation of our plan.

A Letter from Director G. Gordon Whitnall

EDITOR The Architect and Engineer,
San Francisco.

Sir — I note with much interest the references in the June and August numbers of The Architect and Engineer to the subject of the Los Angeles Civic Center. Each of the articles referred to, in a kindly way, criticise the definite plans tacitly approved by the citizens of Los Angeles in connection with their authorizing a bond issue for a new city hall. Inasmuch as the City Planning Commission was, and is, sponsor for the program thus far approved and under way of development, it might be of interest to have a word concerning the circumstances necessarily involved in the decision of so momentous a question that were not referred to in the previous articles.

I speak of the whole subject as a program rather than a plan. This we have felt essential because of the many instances in which ideal plans have been evolved but never realized. We are ready to concede that a far more idealistic plan could be prepared if we were permitted "to cut it out of whole cloth." Such a plan, however, because of the particular difficulties certain to result, could hardly be considered in the nature of a program. Without a program, it is our feeling that any plan would constitute but another addition to the already over-burdened archives bulging with dust laden plans. It should be stated in fairness to Messrs. Cook & Hall who were engaged by the City and County under the direction of the City Planning Commission, to evolve a program of treatment, that their task was to develop a plan definitely recognizing certain stipulated physical features that in the opinion of the Commission were so matter of fact as to necessarily compel them to be incorporated in any plan in their present form. In other respects than existing or definitely projected improvements, certain traffic requirements were stipulated as necessities. With these materials, the consultants were directed to prepare a plan emphasizing certain features that would be intelligible to the general public and of the utmost interest to them regardless of the degree to which the finished product might grate upon the more delicate nerves of our trained architects and city planners. Those employed were specifically directed to erect, as it were, a certain civic institution out of very definite and inflexible bricks even at the temporary expense of losing the beauties of an architecturally perfect picture.

Should one care to intimately study the possibilities of the plan now definitely under development, it will be discovered that the distinctive topographical features are made the most of consistent with traffic requirements. The difficulty that has confronted so many large projects of this kind and the reason, probably, for so many failures, is found in the fact that certain important elements were omitted in the preparation of the plans. This can be best illustrated by the case of an architect who conceives the idea that a certain family is in need of a home and proceeds with the utmost architectural skill, to design a structure that in his opinion would be ideally suited to the requirements of his prospective client. Under such procedure, it is conceivable that the plan of the building would be architecturally perfect in its elevation, in its proportions, in its equipment and in its coloring and in its engineering and in its style, but it would only be on paper. It would still be incumbent upon the architect to convince his client that the home

he had designed was exactly the home the client should have and it is conceivable even that the client's wife might have some ideas differing slightly from those of the client himself. Assuming that the architect should be such a diplomat as to persuade his victim to become a client, he might then find himself confronted with the difficulty of adapting his house to the only site owned by the client and assuming further that the architect and the client and the client's wife and the site, could all be brought into accord, there would still remain the problem of finances to solve.

The Civic Center of Los Angeles was not developed along that theory. The client, in this case the City of Los Angeles, was first persuaded that it needed a certain room in the form of a city hall. It was next demonstrated that the client evidenced an interest in his necessity for a city hall and that such a building would best serve its purpose if grouped in proximity to other similar buildings, and the result logically was the conception of a Civic Center. It was next pointed out that if a Civic Center was the objective that it should not be erected from the standpoint of the necessity of the city as it exists today but rather from the standpoint of the metropolis certain to develop in the future. With this conception, it was relatively a simple matter to decide upon a location best suited to serve the needs of that future Greater Metropolis and the site subsequently determined upon was the result.

The desire, however, for a Civic Center, in itself was not sufficient unless it could be demonstrated that it would be an economic move to provide for the community's necessity in that form. The economy of the program was best demonstrated through calling attention to the facts of the existing ownerships by the public of certain lands necessarily involved and certain buildings already in existence. To emphasize these points, it was quite essential that any picture of the finished product necessarily make quite conspicuous, those buildings readily recognized by the public as existing. Hence, the finished product that is spoken of as the Los Angeles Civic Center Plan.

Now we are confronted with the necessity of evolving that plan. It is unnecessary, of course, that we actually duplicate the San Francisco city hall shown to be part thereof, or that we carry out architecturally other details of buildings not now in existence. It is essential, however, in our opinion, in view of the public's extreme interest and financial control over the whole program, that we combine in proper proportion, the economy that can come only from idealizing to the highest degree, that which already exists and adding to that as occasion warrants, new units. Viewed from this angle, therefore, the so-called Los Angeles Civic Center Plan is seen to involve far more than the mere heterogeneous architectural assembly that is shown upon the plans as published. It is sincerely hoped, and with some reason to expect a realization of the hope, that in the actual development of the whole program, unit by unit, there should result an architectural symmetry both in line and proportions that will reflect advantageously the ideals of the community that the Center represents and shall in addition thereby emphasize to the highest degree the distinctive topographical ideas that attach to the location adopted.

Sincerely,
G. GORDON WHITNALL,
Director, Los Angeles City Planning Commission.

September 18, 1923.

Report of Competition for the Best Design of a House to Cost $5,000

THE Community Arts Association of Santa Barbara, through its Plans Division, interested in enhancing the attractiveness of the city, inaugurated a competition for the best design of a house to cost not more than $5,000. The competition was under the supervision of the Library and Exhibits Committee of the Association, consisting of Mrs. John D. Vhay, chairman; Mrs. James Osborne Craig, Mr. Robert W. Hyde, Mr. Robert J. Jenckes and Mrs. Frances B. Linn.

Mr. Carleton Monroe Winslow of Los Angeles acted as consultant.

The Los Angeles Architectural club, through its president, Mr. Clifford A. Truesdell Jr., appointed the three professional judges, all members of the American Institute of Architects. These appointees were: Messrs. Pierpont Davis, Sumner Spaulding and Jesse Stanton. The two lay judges were: Mrs. George Washington Smith of Montecito and Mr. Daniel Kirkhuff of Santa Barbara.

The competition was open to any one. Drawings were submitted anonymously. Competitors presented their identity in plain sealed envelopes, which were not opened until after the awards had been made. The drawings were required to be the individual work of competitors, although the work of partnerships was admitted. Criticism of patrons, as obtains in architectural ateliers, was allowable, but it was required that drawing and rendering be done by the competitors.

Following is an extract from the circular letter sent out giving subject of the competition:

A dwelling house, suitable for California, of not over five rooms, including living room, dining room, kitchen, two bed rooms and bath, (living rooms and dining room may be combined, but will nevertheless count as two rooms), placed upon an inside lot 50 feet wide upon the street and building line, and 150 feet deep without an alley in the rear, also a garage for one car which may or may not be separate from the house and placed anywhere upon the lot. The street in front is supposed to be level, and has a five-foot sidewalk directly abutting the building line and a parking strip five feet wide between the sidewalk and the street pavement. The contours of the lot may be determined by the contestant, as may also the points of the compass.

The character of the house, such as an exterior of stucco, shingles, or clapboard, also the size of rooms and whether the house shall have one or two stories shall be left to the discrimination of the competitor.

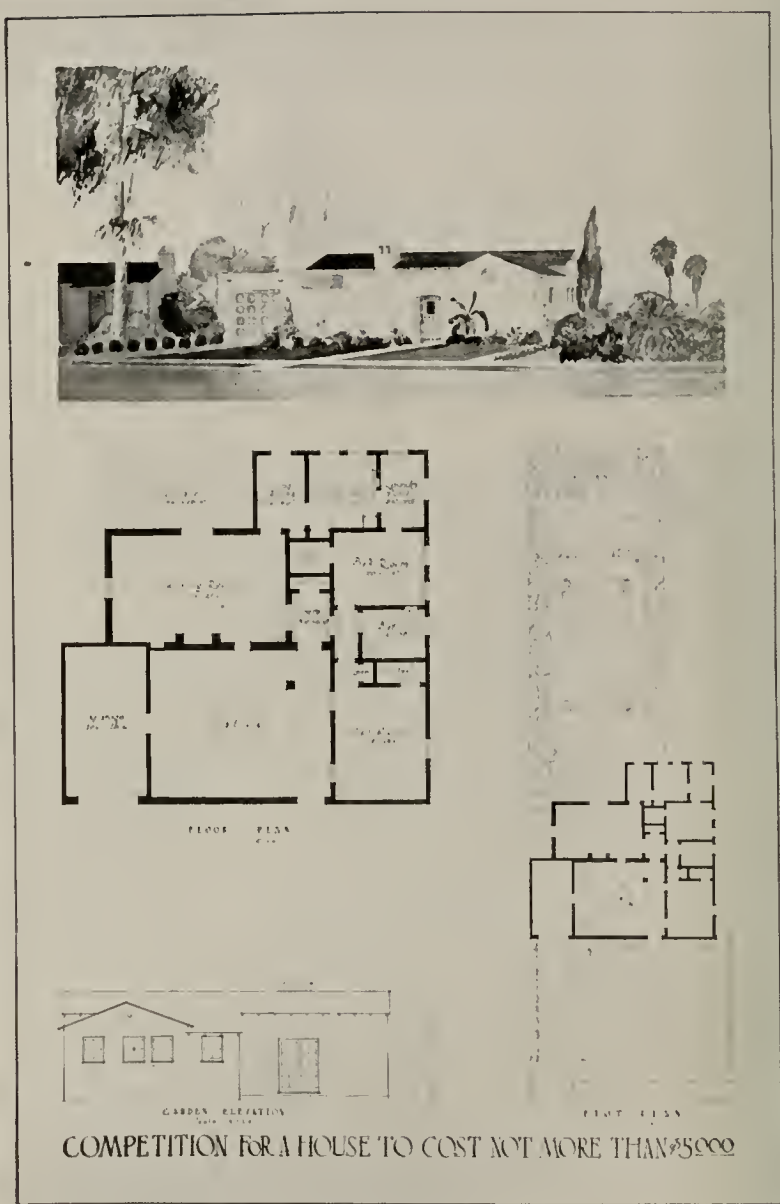
The drawings shall be accompanied by a bona fide estimate of cost by a responsible builder. It is recommended, but not required, that the estimate be itemized. The house must not cost over $5,000, which sum is to cover all painting and decorating, exterior walks and drives, but not gardening or planting.

Drawings required. Work presented to be on one sheet of white drawing paper, mounted on cardboard 30x40 inches in size, with the title at the bottom of the narrow side so that the drawing may be shown vertically. The drawing to consist of floor plan or plans at one-fourth inch scale, showing garden treatment, and other plans if necessary at one-eighth inch scale. Also a perspective view of the house, scale optional. Minor details in elevation or perspective may be added.

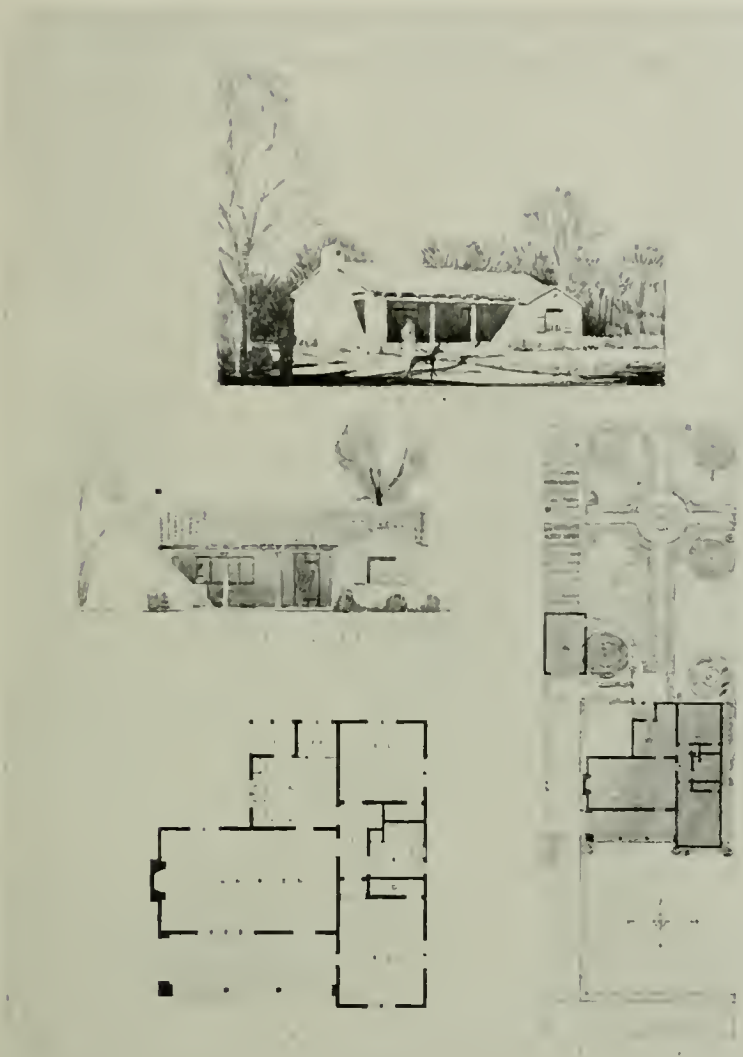
The prizes offered were as follows: First prize, $500; second prize, $200; third prize, $100; five honorable mentions with prizes of $20 each; five mentions without money prizes; honorable mention, "hors de concours."

The designs awarded first, second and third prizes are reproduced on the following pages.

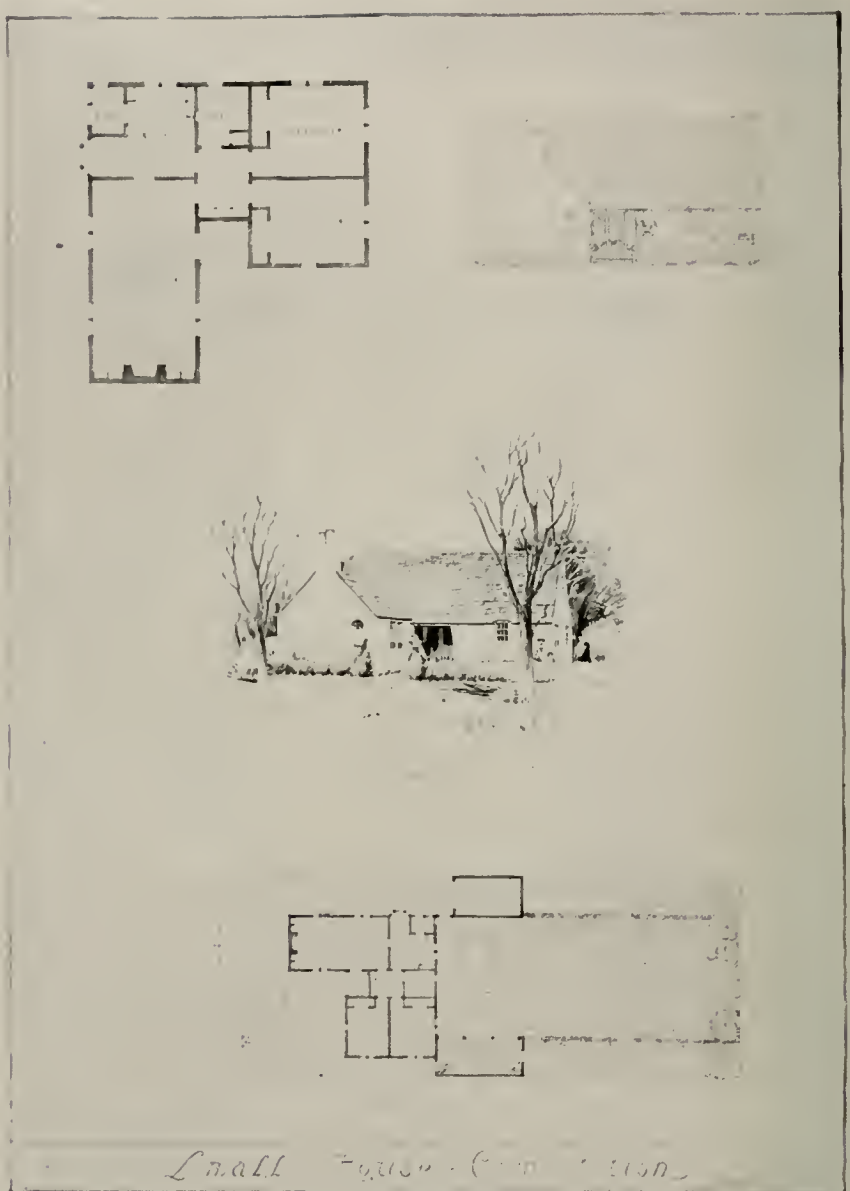
First Prize:	Moody, Walter L.	No. 51.
Second Prize:	McSweeney, A.	No. 72.
Third Prize:	Miller, Leffler B.	No. 24.



AWARDED FIRST PRIZE, SMALL HOUSE COMPETITION. DESIGNED BY WALTER L. MOODY



AWARDED SECOND PRIZE, SMALL HOUSE COMPETITION. DESIGNED BY A. Mc SWEENEY



AWARDED THIRD PRIZE, SMALL HOUSE COMPETITION. DESIGNED BY LEFFLER B. MILLER

Honorable mention with money prize:

Clarke, Harrison.	No. 74.
Lewis, H. G.	No. 35.
McCully, L. Gail.	No. 58.
Richmond, H. S.	No. 83.
Harman, Everett R.	No. 54.

Hors de concours:

Miller, Leffler B.	No. 75.

Honorable mention without money prize:

Messrs. Murphy and Cullity.	No. 36.
Eastman, Frederick A.	No. 34.
Fletcher, Mr. Ted.	No. 61.
Fuller, Lee F.	No. 17.
Miller, Leffler B.	No. 23.

In addition to the foregoing awards of prizes and honorable mentions by the jury, the Community Arts Association feels that recognition should also be given to a number of other meritorious designs, and has, therefore, awarded a special mention to each of the following:

Anderson, Geo. C.	No. 9.	Lemmon, C. W.	No. 43.
Butler, Calvin M.	No. 8.	McSweeney, A.	Nos. 70, 71.
Church, K. D.	No. 26.	Mackay, J. V.	Nos. 45, 46.
Connor, Rose	No. 12.	Roberts, A. D.	No. 69.
Crawford, R. H.	No. 16.	Weaver, John E.	No. 56.
Daniels, J. R.	No. 13.	Williams, Paul R.	No. 73.
DeAhna, M. M.	No. 76.	Winegar, W. Ray	No. 39.
Duell, Randall A.	No. 10.		

After the awards were made, an exhibition of the designs was held at the Paseo De la Guerra, 21 East De la Guerra street, Santa Barbara. The exhibition was open to the general public from September 15th to 22nd. Over eight hundred interested persons came to examine the plans, and the inquiries made justify the committee in the belief that there is a very vital interest in small house designs.

* * * *

Concrete Dance Floors

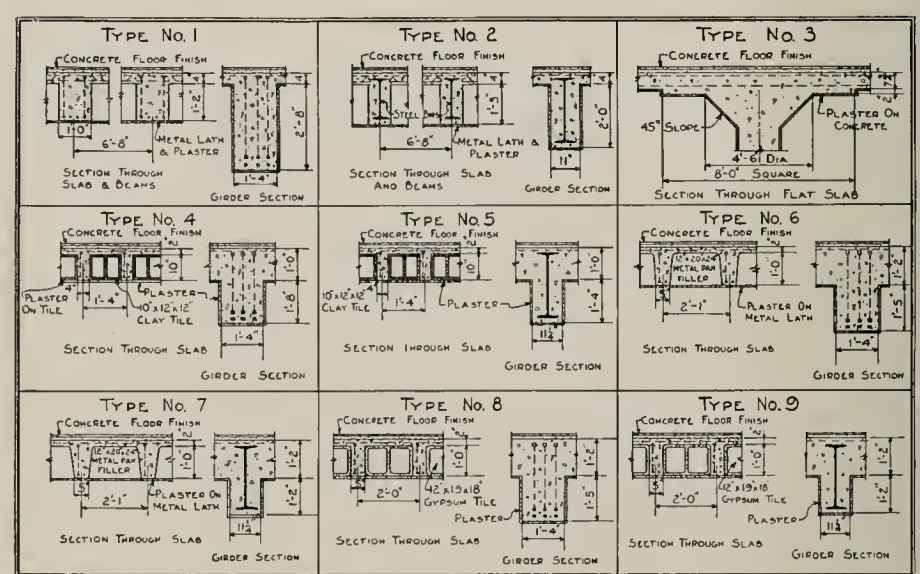
A SATISFACTORY surface for dancing is usually obtained by giving an existing concrete floor one of the following simple treatments. However, a more perfect surface will be obtained by first grinding the floor with a floor surfacing machine.

1. Liquid soap applied to a floor in the form of a lather and rubbed into the pores with a scrubbing brush will, after repeating the process, produce a uniform, smooth surface. An occasional application of powdered soap to a floor thus treated will keep it in fairly good condition for dancing. If the floor is somewhat rough and porous several coats of the soap treatment will be needed.

2. A mixture of paraffin wax and turpentine may be applied to the floor in sufficient quantity only to fill up the pores. An excess of the material would produce a sticky film. Both turpentine and paraffin wax should be of a good grade and no more paraffin used than will be completely dissolved in the turpentine. After the turpentine has evaporated, that is, after the floor surface is dry, it should be treated with powdered wax in the same manner as for a wooden dancing floor.

3. Paraffin wax may be driven into a concrete floor by heating the floor and treating it with the melted material. The object of heating the floor is, of course, to obtain penetration of the wax. The turpentine in No. 2 above is used as a carrier to get the paraffin to penetrate into the concrete surface—From "Concrete Floors;" a brochure published by the Portland Cement Association.

QUANTITIES IN TYPICAL CONCRETE FLOORS — TYPE OF FLOOR	Type Number	Quantities of Materials Per 100 Sq. Ft. in Various Types of Concrete Floors—Girders Included: Quantity Lb. Struct. Steel—Includes Conn. Angles	Quantity Lb. Reinf. Steel—Includes Temp. Bars, etc.	Quantity Cu. Ft Concrete—Includes Fireproofing	Quantity Sq. Ft. of Forms Contact Surface	Quantity Cu. Ft. 10" x12" x12" Hollow Clay Tile	Quantity Lin. Ft 12"x20"x24" Metal Floor Pan Fillers	Quantity Lin. Ft. 12"x10"x18" Gypsum Tile Fillers	Quantity Sq. Yds. Plaster on Tile, Gypsum or Conc.	Quantity Sq. Yds. Plaster on Metal Lath	Total D. L. of Floor in Lbs. per Sq. Ft. Floor Finish Omitted	Ratio of D. L. of Floor to That of Type No. 2	Type Number
Reinf. Conc. Slab, Beams and Girders	1	....	478.	67.	160.	....	....	...	2.4	10.4	112.	1.11	1
Reinf. Conc. Slab, Steel Beams and Girders	2	1107.	123.	54.	155.	....	..	.	1.3	10.6	101.	1.00	2
Reinf. Conc. Flat Slab—Drop Panel	3	..	260.	69.	102.	....	. .	..	11 2	.	108.	1.07	3
Reinf. Conc. Joists and Girders—Tile Fillers	4	....	480.	55.	116.	68.	.	..	13.0	. .	116.	1.15	4
Type 4 except with Steel Girders	5	450.	330.	50.	113.	68.	.....	..	12.5	...	112.	1.11	5
Reinf. Conc. Joists and Girders, Metal Fillers	6	.	440.	65.	115.	....	42.	..	3.0	10.0	107.	1.06	6
Type 6 except with Steel Girders	7	448.	322.	60.	112.	....	42.	..	2.2	10.0	104.	1.03	7
Reinf. Conc. Joists and Girders, Gypsum Fillers	8	.....	430.	57.	115.	...	..	45.	12.6	....	111.	1.10	8
Type 8 except with Steel Girders	9	450.	330.	52.	112.	..	....	45.	12.4	...	108.	1.07	9



Operating Costs of an Electrical Home

By H. L. GARBUTT*

IS AN electrical home an expensive luxury? In its advertising, in its literature and in its sales arguments, the electrical industry assures the public that such is not the case, but the majority of these statements have lacked weight because they have not been based upon actual cost data under home conditions. A quarter of a million people in California have inspected electrically equipped homes. They have been told of the multiple conveniences of electrical appliances, and have accepted the iron, vacuum cleaner, washing machine, percolator and other devices as necessities in the equipment of a modern home. They are ready to believe that electricity is more desirable than other fuels for cooking and heating, on account of its cleanliness, dependability, ease of adjustment and efficiency, but they have not been converted to a complete electrification of the home on account of the fearful bugaboo—cost of operation.

The writer, who owns a completely electrified five-room bungalow at 6 Allston Way, west of Twin Peaks in San Francisco, has kept a careful record of costs over a three-year period and finds electricity to be economical. Current has been supplied for the past three years at the prevailing rates. In the accompanying table the cost per month was taken from the monthly statements of the power company. During the three years, the house has not been closed for more than three consecutive days. The meals prepared have averaged sixteen per week. Prior to December, 1921, heating was done with wood and coal (oak wood $20 per cord, soft coal $20 per ton) in a fireplace, together with two 600-watt Cozyglow portable heaters. Subsequently 7 kw. in air heaters were installed and the fireplace closed.

The prevailing rates for operating an 8-kw. electric range, air heaters, lights and a full and complete line of appliances have been 8 cents per kilowatt hour for the first 30 kw-hr., 3½cents per kilowatt hour for the next 130 hw-hrs., and 2 cents per kilowatt hour for all over 160 kw-hrs. The rates for operating the 1,500-watt thermostatically controlled water heater were $2.50 per month plus 3 mills per kilowatt-hour.

On the basis of these rates, it is seen from the table that the costs for the various phases of electrical service in this five-room house for a family of three were:

Average cost per month for water heating	$4.11
Average cost for cooking, lighting and operating two 600-watt air heaters and a complete line of appliances	6.15
Average cost per month to operate 7 kw. in air heaters	3.62
Average cost per month for cooking, heating, lighting, washing, ironing and machine sewing	13.88

From this dollars and cents cost can be deducted the saving in time and labor, the cost of repainting the kitchen every year, and the multiplicity of conveniences which electricity brings about. The bother of carrying wood and coal, tending a furnace, disposing of ashes or cleaning a gas range are entirely eliminated in an electrically equipped home. The saving in food values is an item to which no dollars and cents value can readily be assigned. The additional time which a housewife has placed at her disposal is a saving which does not appear to be above figures. Innumerable other arguments can be offered in further support of the contention that electricity is highly economical.

* Merchandising Manager, Westinghouse Electric & Manufacturing Co., San Francisco.

With actual cost figures such as those above, a belief in the various appliances based on actual experience, and the strong sales argument which the electrical idea lends itself to, men of the electrical industry will find the task of electrifying every modern home less difficult.

Cost of Operating an Electric Home Over a Three-Year Period*

(Compiled by E. Earl Browne in the Journal of Electricity)

	1920-21		1921-22			1922-23	
Month—	Range, 2—600 Watt Air Heaters, Lights and Appliances	Water Heater	Range, 2—600 Watt Air Heaters, Lights and Appliances	Range, 8,200 Watts in Air Heaters, Lights and Appliances	Water Heater	Range, 8,200 Watts in Air Heaters, Lights and Appliances	Water Heater
March	$5.37	$3.85	$6.21	....	$4.36	$ 9.64	$4.45
April	4.71	3.70	5.37	.....	4.25	9.15	4.26
May	4.21	3.79	5.71	....	4.03	7.66	4.20
June	4.05	3.75	7.89	....	4.10	8.58	4.20
July	7.38	4.56	7.95	.....	3.49	7.43	4.16
August	6.37	4.80	4.40	.....	3.96	6.03	4.14
September	6.08	4.07	5.30	.. ..	3.90	6.85	3.87
October	7.18	4.55	6.11	. ... ..	3.17	8.28	3.76
November	7.46	4.32	6.29	. ...	4.12	12.58	4.05
December	8.20	4.61	**	$10.97	4.03	14.98	4.04
January	7.55	4.29	**	13.96	4.25	15.57	4.19
February	5.75	4.23	**	14.49	4.19	10.45	4.28
Average	$6.18	$4.21	$6.13	$13.14	$3.99	$9.77	$4.14

*These figures include a surcharge of 6 per cent.

**Seven additional kilowatts in air heaters were installed December, 1921.

* * * *

Lumbermen Act to Prevent Profiteering in Lumber for Japan

Steps are being taken by the Pacific Coast lumbermen to prevent the distress of the Japanese people being exploited by speculators. Through Mr. R. F. Hammatt, secretary-manager of the California Redwood Association, the directors of the Douglas Fir Exploitation & Export Company, an exporting company of Pacific coast sawmill companies in the export trade, wired the National Association as follows:

"We believe that inasmuch as a number of exporters are working for five-day options on large amount of lumber for Orient we should not put it in power of speculators to hold up the unfortunate people of Japan, but should co-operate with those who are raising funds to relieve their sufferings. We have still approximately forty million feet for Japan and it is unanimous opinion of meeting that we should grant no options nor accept any business until we know more about the situation."

In this connection the Red Cross national headquarters authorizes the statement that it is acquiring for immediate shipment 9,000,000 feet of lumber, half at Portland and half at Seattle, and that 6,000,000 feet of this amount has been donated by two lumber companies. While there are reports of inquiries from Japan for large quantities for purchase, the Red Cross is not involved.

* * * *

No Cause for Worry

When the plumber announced at the kitchen door that he was the man who had come to fix the sink, Mrs. Kettles said: "I want to caution you to be extremely careful while doing your work. All my floors are highly polished and in perfect condition."

"You don't need t' worry, lady," said the plumber gratefully. "They ain't no danger of me slippin' an' hurtin' myself. I got nails in my shoes."

Functions of the Architect

THE American Institute of Architects has recently published a second edition of a circular to the public, entitled, "Functions of the Architect." The circular is issued for the purpose of supplying information to those outside the profession of architecture who are interested in building. It gives the prospective client facts about architectural service and what is expected of the architect in return for his professional fee.

The following abstracts will be found of interest:

As all buildings are seen, society has a right to demand that none be ugly; the life of the community requires that none be unsafe or dangerous to health; social economy requires that they be not wasteful of space or ill-suited to the purpose for which they are created. Every building is to some extent a public matter—even a private house. No building should be erected that is not an attractive addition to the landscape. A well-designed building is a more valuable property—a better investment. A well-constructed building is a more economical investment. No owner however gifted in other ways, no contractor however skilled, can design and build the simplest house equal in beauty, utility and cost to one completed under the guidance of a trained architect.

THE ARCHITECT

An architect should have a fundamental knowledge of his art as an expression of beauty of structural requirements and of practical design and planning. The practice of architecture requires business executive ability of a high order. Inasmuch as the owner's financial interests are deeply involved in the architect's action, the integrity of the latter must be above question. The development of a well equipped architect demands long and careful study and preparation.

Registration laws in many states require a high school training, graduation from a recognized collegiate school of architecture or ability to successfully pass special state examinations and specified terms of practical experience in an architect's office. Such legislation is yearly becoming widespread and the provisions are increasing in stringency. A very usual preparation for the practice of architecture includes four to six years in a technical school or college, a year or two of travel and an extended apprenticeship in an established office.

The architect must be familiar with the history of architecture, with the various "styles," and with such allied arts as sculpture, craftsmanship, interior decoration and landscape design.

Properly to define and supervise the construction of any but the most elementary structure, the architect must either personally or through his organization have knowledge of all kinds of standard building materials and types of construction, with the ways in which different kinds of work are performed, and a competent understanding of the principles of heating and ventilating, plumbing and sanitation, electrical systems and other special departments of the building industry.

Certain buildings require special ability in exterior design, they must primarily be beautiful. Others require special knowledge of particular methods of construction. Still others require technical familiarity with the peculiar uses for which they are erected.

Therefore the owner should consider the natural tendencies, training and special experience of the architect he proposes to employ for a specific type of building.

THE DUTIES OF THE ARCHITECT AND OF THE OWNER

After he has been appointed, an architect obtains his client's description of the requirements, studies the problem from all available angles, advises the client of ways in which the first idea may be improved and makes rough drawings or sketches of the building, expressing this. These sketches should be modified and redrawn until both the owner and architect are satisfied that a completely adequate solution has been found. If an owner is not familiar with drawings as an expression of form, the architect should carefully explain them and if necessary have a model of the final structure made. It should be noted that the manufacture of such a model implies an added expense which the architect can not fairly be expected to assume. At this period, the owner should give to the study of the problem ample time and should make a personal effort to fully inform the architect and to understand his solution.

When the sketches have been finally approved, working drawings with dimensions and notes and specifications are made. Large scale and typical full size details are

often drawn at this time. The production of working drawings is very costly. Changes in them usually involve serious expense. Hence working drawings should not be begun until the scheme is well developed and determined. The owner should freely give his personal time to an examination of these drawings, the details and specifications. Although he may not understand all of the technicalities he will know how the different parts of the work are to be treated and will be able to discuss with the architect points that might otherwise be contrary to his desires.

The next step is that of obtaining proposals from contractors. If competitive bids are desired, the architect usually prepares a list and should carefully examine the ability, financial responsibility and reputation of those he recommends. When the owner selects the contractor, the architect usually feels relieved of responsibility. However, he should report his objections to the owner if he believes the contractor is unsuitable. The owner may employ one general contractor or several for different parts of the work and when a contractor has been selected the architect prepares the contracts and should have the necessary legal knowledge and experience to do this satisfactorily in the ordinary case without the use of an attorney. The American Institute of Architects issues special forms for this purpose as well as for other contractual relations.

During the progress of the construction, the architect supervises the work and he should diligently guard the interests of the owner inasmuch as they might be damaged by inferior work, improper bills or unjustified claims for extra payments. At the same time he should see that the terms of the contract are fulfilled in a just and equitable manner as regards both owner and contractor. In view of the fact that he must remain an unbiased judge of all questions, he should have no financial interest in the building operation and therefore cannot assume any guarantee of the cost to the owner.

THE REASONS FOR EMPLOYING AN ARCHITECT

All building undertakings are better and more valuable if they are more beautiful. A building is a better investment when it is well planned and if it be attractive in appearance. Bad planning, waste space, poor means of circulation, fire hazards, usually result in loss of income, higher percentages of taxes to income and increased insurance rates. In many engineering problems, bridges and towers, for instance, an architect is called into consultation to determine the design just as in more predominantly architectural problems a structural engineer is called in to design the steel skeleton.

The average client is unequipped to design or direct the construction of his building. His attempt to do so is as certain to court disaster as would be his untrained effort to supplant his physician for his own cure.

The architect usually saves his client considerable unnecessary expenditures of money by eliminating or lessening the number of expensive changes after the contract has been let. When contractors' competitive bids are received well defined plans and specifications permit accurate estimates thereby eliminating the addition of large sums to guard against uncertainty. The architect obtains for the owner all the benefits that accrue from ligitimate competition. If the contract be let on a cost and percentage or fixed profit basis he carefully checks the accounts. He also secures for the owner proper compliance with the contract and the elimination of defective material and workmanship.

THE ARCHITECT'S CHARGES AND THE COST OF THE WORK

The fees to be paid should always be discussed frankly by owner and architect and determined clearly at the beginning of the operation. If the proper amount or rate of charge cannot be settled until the extent of the work has become definite, a preliminary charge for consultation, early sketches or estimates will usually be found acceptable to the architect.

The Schedule of Proper Minimum Charges of the American Institute of Architects defines the customary fees if the work be performed on a percentage basis. If the operation be divided into several contracts the architect's labor is greatly increased, and he eventually performs the work for which a general contractor would be employed, who would probably receive ten per cent for his services. In such event the architect should be adequately paid for such additional services by a marked increase in the percentage of his fee. It is usual for the owner to pay for the cost of special engineering services, traveling expenses, blue-prints, long distant telephone calls and telegrams.

Two other forms of compensating the architect obtain to some extent. The architect may agree with the owner upon a specified lump sum for his services in supplying drawings, specifications and even supervision for the whole operation; or he may be paid for his expenses in doing the work plus an agreed profit which may

be either a percentage of this cost or a lump sum for the architect's personal services.

An architect may be employed to make drawings without supervision of the construction or to supervise without having made the design, but this is generally unsatisfactory for both owner and architect.

THE SELECTION OF AN ARCHITECT

The ability of the architect properly to perform his duties makes for the success or failure of the building entrusted to him. Moreover, he is the disbursing officer of his client, in control of large expenditures. The architect who wisely administers the duties entrusted to him may greatly reduce the cost of a building. If the public realized this fully, they would select with care the architect best fitted to the requirements of each building operation. Except for certain forms of public and semi-public work a "competition" is not considered by the American Institute of Architects the best means of making such a selection. The custom of asking for preliminary sketches before making a selection and therefore before serious study of the problem can take place, is deplored and condemned. An architect should be selected with the same careful consideration of his work and reputation as an attorney or physician.

* * * *

The Retaining Wall

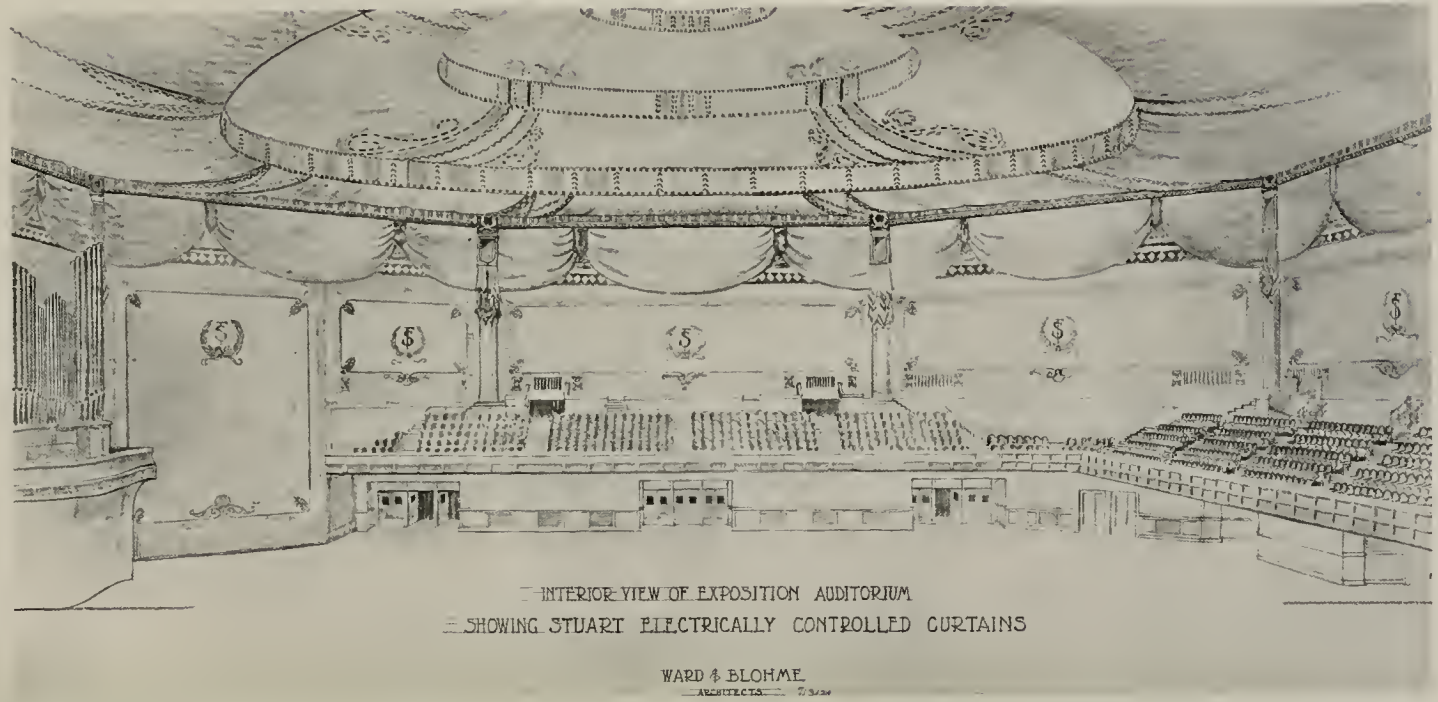
A GENERATION ago we used stone or brick for retaining walls. We relied on sheer mass to do the work. Wherever stone was available it was used with good effect, because stone is the ideal building material. By reason of the materials used we were able to give the retaining wall a semblance of beauty. The retaining wall is often a vital part of our construction and should not be neglected.

With the advent of reinforced concrete there was a revolution in the construction of the retaining wall. We commenced to use thin walls of concrete, containing many steel bars and backed up by counterforts. We also inherited with the concrete a plain, uninteresting and dead surface on the face of the wall. We began to realize that an extended surface of concrete must be broken up and a little color added to break the monotony. Then we introduced the pilaster at intervals and put a projecting course across the top. This method was a great improvement over the straight surface wall. Then we began to put panels in the spaces between the pilasters, and sometimes brick and tile insertions for color. With these little refinements the retaining wall began to be a thing of beauty.

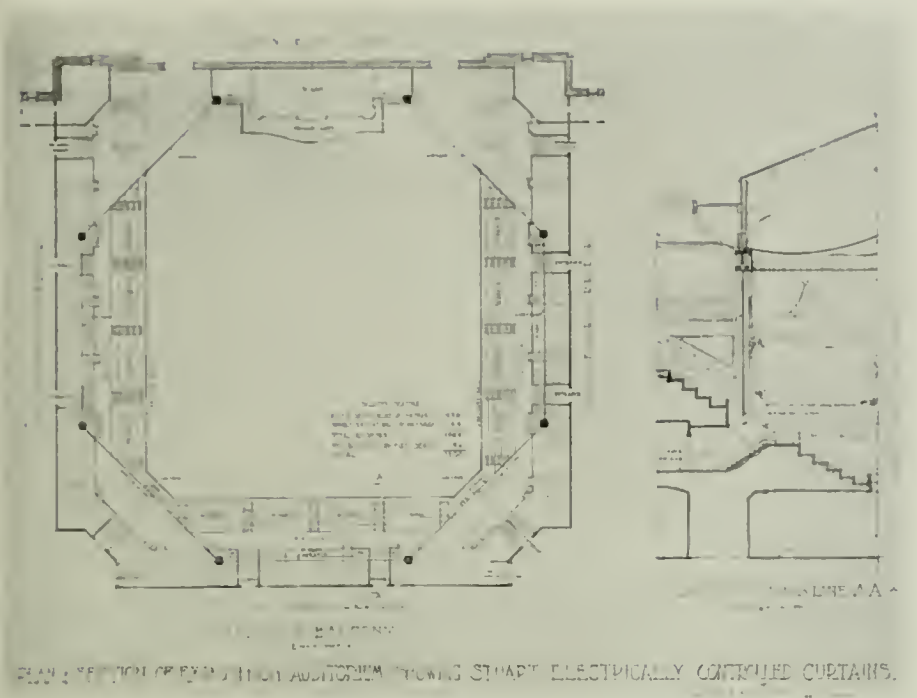
The retaining wall cannot well be treated differently from the building. There should be a base, a shaft and a capital, the three main elements of design. The retaining wall may be made even more beautiful than the building, because of the fact that it has plenty of wall surface, which is often lacking in the modern building.

It is practical to use terra cotta on the face of the retaining wall, if the means are available. No wall should be neglected in the way of design. The Italians and the French have thrown art into their walls and made them objects of beauty. The retaining wall is the first thing that we see in connection with a residence and it should never be neglected.

The concrete wall is structurally the ideal wall, and if it is treated properly it is an object of beauty. The tendency has been to neglect the exterior of the wall. Vines may be planted at the base of the wall to cover it up eventually. It takes years, however, to cover the wall, and the design should not be neglected, even if it is to be covered. It is a well-known fact that it is undesirable to use vines on the walls of a residence, because of the retention of moisture. In a retaining wall there is no such objection, and the vines may be used with good effect. Flower pots along the top of the wall above the pilasters add very materially to the appearance.—Washington State Architect.



ACOUSTICAL TREATMENT, EXPOSITION AUDITORIUM
WARD AND BLOHME, ARCHITECTS



ACOUSTICAL TREATMENT, EXPOSITION AUDITORIUM
Ward and Blohme, Architects

Electrically Controlled Curtains for Exposition Auditorium, San Francisco

By CLARENCE R WARD, of Ward and Blohme, Architects

SINCE the completion of the Exposition Auditorium in the San Francisco Civic Center, there has been much complaint made by speakers, musicians, opera singers and others as to the condition of the acoustics of the building. The basic reason for this is that the roof is practically domical in shape and also that the cavernous spaces occupied by the galleries result in imperfect movement of sound waves and reverberations.

Efforts have been made from time to time to correct these faults. A canvas canopy with valances around the area of the interior columns has been put in place, and sections of the walls and ceiling have been padded with deafening materials. While this has helped considerably, it has not been entirely successful.

Another trouble appears to be that a large number of the seats in the galleries in a majority of instances are unoccupied when the Auditorium is in use. It is a well-known fact that proper acoustics are impossible in an unoccupied auditorium, however well it may be designed. These facts, as well as the psychological effect upon speakers, singers and musicians produced at times by the large number of unoccupied seats, prompted the Board of Supervisors to adopt the scheme of reducing the areas of the Auditorium at such times as required by means of curtains.

Contracts have been let for what is known as the "Stuart electrically controlled curtains," arranged, as will be seen from the illustrations, on the lines of the columns. This produces an octagonal formed auditorium, the curtains reducing the seating capacity in the galleries to about one thousand people. These curtains may be raised or lowered and properly arranged within five minutes. They are to be fireproof, decorated canvas and are expected to produce a more comfortable effect for smaller assemblages than the present condition now provides for.

* * * *

Notes on Recent Ventilation Practice for Public Buildings

By G. B. N., in Heating and Ventilating Magazine

DURING the past fifteen years heating and ventilating apparatus for all types of buildings has become more and more complicated, particularly that installed in some of our higher class buildings.

With the continued increase in the cost of material reaching its maximum during the war, engineers were confronted with the question: "Is the piece of apparatus or system proposed to be installed necessary, and is the expense of same warranted?" As the various substitutes for building material were developed so as to keep the cost of the building at a minimum, the engineer was also called upon to reduce his cost correspondingly.

In a large number of our public buildings, such as schoolhouses, there has been developed the highest type of ventilating system, consisting of a fan system bringing air into the rooms and exhaust fans removing vitiated air from the rooms, with connecting ducts. In some cases the air before entering the room is passed through air washers, which washes and humidifies same, and, in addition, the air is given ozone by ozone apparatus. At present it is safe to say that the heating and ventilating apparatus of such a system will cost almost 15 per cent of the entire cost of the building.

The systems have been in use more or less in some of our better class buildings for a considerable period. Yet, with all the advantages claimed by the manufacturers, we hear various complaints from the owners, who state

1. That the apparatus does not perform the desired functions.
2. That the operating costs are too high for the service perfomed.

In the matter of a duct system, some engineers are installing an individual duct directly from the inlet fan to the room, while other engineers are maintaining a trunk duct system, so that even the systems are subjects of difference in practice.

Within the last few years, the writer has been called on to design numerous hospital buildings for the State of New York. The original scheme was the gravity system, with heaters installed in the basement and ducts leading to the individual rooms. This system was changed and fan apparatus installed, numerous buildings being equipped in this manner.

After a number of these buildings had been completed an inspection was made by a committee of doctors and engineers who had been appointed to investigate the matter. Upon discovering that in many

cases the systems were not being operated as designed, it was determined that the policy for the State in the general hospitals for the insane would be that no ventilation was necessary.

Of course, the buildings have large window surface and the cubic space per capita is large.

A similar condition has recently been cited in the public schools of New York, and recently it has been reported that an entirely new system of ventilation will be tried.

The writer believes that the ventilating engineer will either have to solve this question to the satisfaction of the owner within a very short time or the owner will take radical steps to reduce the cost of the buildings now being constructed.

This article is not written to belittle the manufacturers of ventilating apparatus, but simply to bring out to ventilating engineers the necessity of cutting the cost of the apparatus installed under their jurisdiction in line with the other costs of the buildings, for every item of cost entered into a building increases the rental thereof, and the rental costs have now reached a point where the general public demands some retrenchment, even at the reduction in some of the refinements.

* * * *

The First Requirement of Good Architecture

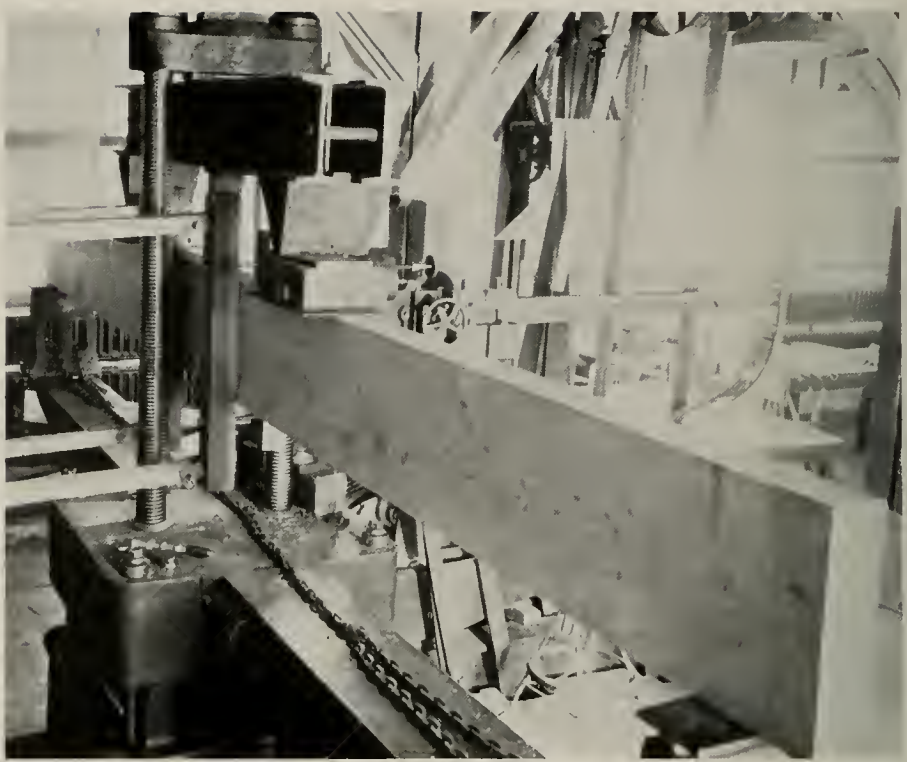
IT IS ONE of the commonplaces in architecture, in the judgment of designs in architectural competitions—I think that is not commonly realized—that the jury will attach greater weight to plan than to elevation; and if there is a slight difference in merit between two plans, it would take an extraordinary badness in the elevation of the better of those designs, and an extraordinary beauty in the elevation of the second best design to give that second best plan the first place in the competition.

The best architectural jury will look first at the plan, to see whether it is going to produce the utility that will meet the purpose, and whether it is going to be economical in its construction or not. They feel a security in doing that because of the fact that a good plan will produce a good elevation in competent hands. Hence the architect's major responsibility and the thing that occupies most of his time and study is the problem of providing something practical, something that will satisfy economic requirements, and he can best produce a work of beauty out of those conditions.—Dr. Warren P. Laird.

* * * *

Location of Steel in Columns

SOME building codes encourage the placing of steel too near the surface by specifying that in vertically rodded columns only the concrete inside the ties may be counted to carry the load. Mr. H. D. Loring of the Ferro Concrete Construction company recently said that this appears to be based on an incorrect idea of the use of ties in vertically rodded columns; their function is, of course, only to stay the vertical bars and they cannot add anything to the strength of the concrete in the way that closely spaced spiral hooping does. Such test data as Mr. Loring has examined do not show any effect of changing the location of vertical steel in a column, as long as it is symmetrically disposed. In designing columns for bending moment, the position of steel must, of course, be taken into account.



Beam Test of Structural Timber

THE photograph reproduced here shows a beam test of a structural timber at the Forest Products Laboratory of the U. S. Forest Service. From tests of this sort on timbers containing defects, it was found that the factors of greatest importance affecting the strength of a timber are the number, size and location of the knots, shakes, and checks and the amount of decay present. Based on the defect limitation, four basic grades for structural timbers have recently been evolved by the federal laboratory together with accurately determined working stresses for the important commercial species in all four grades.

In the numerous tables of working stresses now in use there is a lack of agreement in the values assigned to a given species, and uniform structural timber grading rules do not exist. The result is apt to be either poor construction or poor utilization. When a timber too small for its load is used an unsatisfactory structure, if not actual failure, is the outcome. When a timber is larger than need be, the result is a waste of timber and needless expense.

The relation of the size of defects permissible in the Forest Service grades, now named Extra Select (S1), Select (S2), Standard (S3), and Common (S4), is that of 1, 2, 3, and 4. For the same grades, the working stresses are in the relation of 7, 6, 5, and 4.

The uses for the different grades are as follows: (S1) for use where highest strength requirements obtain in exceptional places in railway and mill construction; (S2) for general use in railway and mill

construction, and wherever a select grade of structural material is desirable; (S3) for general use in building construction and to a large extent in mill construction; (S4) for general use in small houses, false work, and ordinary construction where strength requirements are not so critical.

* * * *

Colored Floor Finish

IT IS often desirable to produce a colored floor surface without resorting to special floor tile or terrazzo. Floors of this sort usually are not to be subjected to heavy abrasive traffic, so that such weakness as may be introduced by the use of coloring material in the top, or wearing course, is not important. Obviously, the coloring matter should be confined to the top course only, according to special information on the subject recently published by the Portland Cement Association.

Only mineral coloring pigments should be used, as other pigments fade rapidly and reduce the strength of the cement to a marked degree. Mineral colors vary in quality and show a tendency to fade, depending on their quality.

The amount of coloring materials added should not exceed 5 per cent by weight of the cement for heavy traffic floors, as larger quantities may effect the strength of the mortar or concrete to an injurious extent. For light foot traffic floors and for ornamental borders, 10 per cent may be used and will produce deep shades. Different shades of color can be secured by varying the amount of coloring material, or by mixing two or more colors.

Red oxides of iron produce the most permanent red tints. Venetian red should be avoided as it tends to run and fade. Manganese oxide is probably the best material for black, although a high grade of lamp black or carbon black is generally satisfactory. Common lamp black should not be used.

The intensities of shades produced by mineral colors will be slightly increased if the materials are mixed for a longer time than required for ordinary work. It has also been suggested that an application of a solution of magnesium fluo silicate or sodium silicate may be effective in setting the color in the concrete and checking a tendency of the color to fade.

Table of Colors to Be Used in Concrete Floor Finish

Amounts of pigment given in table are approximate only. Test sample should be made up to determine exact quantities required for the desired color and shade.

COLOR DESIRED	Commercial Names of Colors for Use in Cement	Pounds of color required for each bag of cement to secure Light Shade	Medium Shade
Grays, blue-black and black	Germantown lamp black* or	½	1
	Carbon black* or	½	1
	Black oxide of manganese* or	1	2
	Mineral black*	1	2
Blue shade	Ultramarine blue	5	9
Brownish-red to dull brick red	Red oxide of iron	5	9
Bright red to vermilion	Mineral turkey red	5	9
Red sandstone to purplish-red	Indian red	5	9
Brown to reddish-brown	Metallic brown (oxide)	5	9
Buff, colonial tin and yellow	Yellow ochre or	5	9
	Yellow oxide	2	4
Green shade	Chromium oxide or	5	9
	Greenish blue ultramarine	6	....

*Only first quality lamp black should be used. Carbon black is light and requires very thorough mixing. Black oxide or mineral black is probably most advantageous for general use. For black use 11 pounds of oxide for each bag of cement.

CALIFORNIA STATE LIFE BUILDING, SACRAMENTO
GEORGE C. SELLON & COMPANY, ARCHITECTS

CALIFORNIA MEMORIAL STADIUM, BERKELEY
Photo by McCullough, October 4th, 1923

The University of California Memorial Stadium

By A. HUBER, Jr.*

ON May 15, 1923, the general contract for the California Memorial Stadium was signed, but on account of unforeseen difficulties in the general excavation, which was under separate contract, a small portion of the site was not turned over to the general contractor until the middle part of June. Therefore, actual construction did not start until July 1st. A perfect building organization, together with the co-operation of the Stadium Commission, will make it possible to complete the stadium in time for the **big game**, November 24, 1923.

The stadium which is located in Strawberry Canyon on the University of California campus is a combination of the earth bowl and coliseum type of elliptical form. The extreme dimensions are 760 feet major diameter and 568 feet minor diameter. The seating capacity is 72,800 and covers a sloped area of 250,000 square feet. On 62 per cent of this area the seats are entirely supported on earth and the remaining 38 per cent on a reinforced concrete suspended slab and beam construction which averages seven inches thick. This in turn is supported by reinforced concrete columns and braced by horizontal tie beams both longitudinally and transversely. The suspended slab and beam portion covers an area of 80 feet by 1200 feet and is located on the west side. The periphery of this superstructure is a reinforced concrete curtain wall averaging 10½ inches thick, 1200 feet long and has a maximum height of 66 feet which is equivalent to a five-story building. The cornices, string courses, mouldings, bases, architraves, rustications, panels and openings on the exterior give the appearance of the Coliseum. At each end of the stadium a huge reinforced concrete score board 50 feet by 34 feet towers 35 feet above the upper row of seats.

*Vice-President, Clinton Construction Company, San Francisco and Los Angeles.

CALIFORNIA MEMORIAL STADIUM, BERKELEY
Photo taken July 13th, 1923. Placing the reinforcing steel for concrete work on the first tier of longitudinal and transverse brace beams

CALIFORNIA MEMORIAL STADIUM, BERKELEY
Showing staging, form work and material bunkers around outside of bowl.

CALIFORNIA MEMORIAL STADIUM, BERKELEY
Showing method of suspended slab and beam construction

CALIFORNIA MEMORIAL STADIUM, BERKELEY
Photo taken August 23rd, 1923. Note tractor at work on field, now green with grass

For the construction work, a concrete plant was installed close to the face of the exterior wall at the third point or about 400 feet from the south end of the main concrete structure, with the intention of erecting a second concrete plant about 400 feet from the north end of the concrete portion as soon as that portion of the site was turned over. Owing to unforeseen difficulties, the excavating contractor was delayed in turning over that portion of the site, therefore the idea of the second plant had to be abandoned and an excessive wheeling of concrete, which proved very costly, was necessarily resorted to. The concrete plant was made up of a 5000 sack capacity cement shed, a 300 cubic yard elevated three compartment gravel and sand bunker with inclined runway used for motor trucks to dump into the bins, one cubic yard concrete mixer and a 100 foot hoisting tower.

A scaffold seven feet wide made of 3 x 4 posts spaced six feet on centers and well braced, was constructed around the entire exterior of the wall to receive the runway plank for wheeling the concrete at the different elevations as needed. The same scaffold was used to cement dash the wall.

The form work for this high wall was very difficult to construct because of the many rustications, belt courses, offsets, mouldings and panels and the fact that the wall was a curve of varying radii. To overcome this difficulty only the most able and skilled carpenters were employed. The forms for the mouldings and panels were run at the mill and the concrete was poured directly against these curved forms giving a finished surface when stripped. No plaster runwork was used on the entire wall.

The false work for the slope superstructure consisted of 4-inch by 4-inch shores spaced 4 feet on centers well braced and wedged. The pouring of this sloped slab was quite a task. The concrete was hoisted to the top elevation of the sloped slab, then wheeled in carts around a runway on the exterior scaffold to the section to be poured. Here the concrete was dumped into sheet metal chutes which were built in 12 foot length-sections and then connected to carry the concrete by gravity to the lower part of the sloped slab. The lower part of the slab was poured first and gradually worked up the slope by removing the chute sections as required. The concrete was mixed rather dry and had to be worked into place to prevent "running." The isolated concrete stairs on the east side resting directly on the earth were also poured in this manner. A small batch mixer, located at the top of the stairs, was used to mix the concrete for these stairs. The forms for the stairs were made of 2-inch lumber in 14 foot sections. The forms were removed two days after the concrete was poured and then reused. The cement finish on the treads was applied soon after the concrete was poured to make an integral finish with the structural concrete. Redwood sills were bedded in the earth slopes for the support of the seat structure. The earth between the sills was thoroughly sprinkled and tamped to form a smooth even surface. A road oil was applied and then an asphalt binder which was covered with rock screenings and lightly rolled. To prevent erosion of the earth under the seat structure such as is at present occurring at the Stanford stadium, the wearing surface is considered a necessity and a most important factor in the construction of an earthen bowl.

The seat boards were made of 2 x 12 Douglas fir surfaced on one side and one edge and rounded at the corners. Wood pedestals, joists,

CALIFORNIA MEMORIAL STADIUM, BERKELEY
Photo taken August 8th, 1923

fillers, fascia, ribbons and foot boards accurately framed and fitted make up the supports. The seat boards and foot boards were made identical in form to permit a selection of the better class of material for the seats. Seat numbers were branded into the seats approximately 1/8-inch deep. After the seat numbering was finished, the entire seats were given two coats lead and oil paint applied with an air brush.

The sub-grade of the playing field was made twenty-two inches below the finished field. Trenches were dug 15 feet on centers on this sub-grade large enough to receive 4-inch agricultural tile with open joints carefully placed to line and grade. After the drain tile was in place the trenches were backfilled to the level of the sub-grade with broken rock. 3/4-inch to 1-inch rock was then spread in a uniform layer 4 inches thick and raked and finished to an accurate level surface. On top of this rock 4 inches of 1/4 to 3/4-inch gravel was deposited and then 4 inches of Monterey Lapis Sand added, all deposited and spread over the same as the rock. Loam was brought from Alameda and distributed uniformly over the sand in a layer 10 inches thick, then dressed

CALIFORNIA MEMORIAL STADIUM, BERKELEY
Photo taken September 6th, 1923

to a perfectly level surface by means of a light roller. The field was seeded September 10th and within two weeks a grass lawn had developed. The area outside the playing field proper contains only 10 inches of local loam placed directly on the sub-grade and rolled.

A crew of 250 men were continually employed for five months. Approximately 7500 yards of concrete were poured and 600 tons of reinforcing steel placed over a large area. One million board feet of form lumber and seven hundred fifty thousand board feet of seat lumber was used. The total cost of the Stadium is slightly over $1,000,000.

The Stadium Commission was represented at the site by D. Ormsbee and Wm. H. Cagle was superintendent for the Clinton Construction Co., the contractors, W. B. Brinker, president. The members of the Stadium Committee are John Galen Howard, chairman; Edward E. Carpenter, Geo. F. Buckingham and Robert G. Sproul, the latter Comptroller of the University.

* * * *

Some Lumbering Locutions

By E. T. THURSTON, Secretary,
General Contractors of San Francisco

LUMBER has ever been the basic building material of the Pacific Coast. The mild climate renders masonry construction for residences unnecessary and the proximity of a plenteous supply of the finest structural timber in the world has, under normal circumstances, determined the question from the economic standpoint.

But times have changed. Lumber is no longer cheap in the West. Rough merchantable Douglas fir, which sold in San Francisco for $16.00 per thousand in 1913, now brings $39.00; and the preponderating influence of this one material has been largely instrumental in maintaining the average price index number of basic building materials sixteen points above the average for the United States.

Now comes the National Retail Lumber Dealers' Association, in order to disprove the allegation that prices are approaching the status which, in 1920, brought on a "buyers strike" and business depression, institutes a survey involving twelve cities in the East, Middle West and South in which typical complete bills of lumber for dwellings were evaluated at prevailing prices of April, 1920 and 1923, respectively, and, in publishing the result, stresses the fact that present prices are thereby shown to be from 26% to 39% lower than the peak prices of 1920.

Then by reference to the abnormal peak prices of 1920 as a base, instead of the stable prices of the pre-war period, it is attempted to beguile the public into believing that prevailing prices are not only fair but perhaps lower than they should be, and to lay a foundation for future advances.

No camouflage of figures should be permitted to obscure the outstanding fact that the present price of structural lumber is about two and one-half times the pre-war price. In other words the price index number for lumber in this market is about 250; and comparison with other index numbers, as for "all commodities" (159) and for average building materials, including lumber, (206), can hardly be expected to encourage the prospective builder.

In this connection, particularly in view of the tendency to blame high prices on increased freight rates, it is interesting to note, from the U. S. Department of Commerce reports, that while the delivered price of Douglas fir lumber in May at Portland, Oregon, was $24.00, it was $44.00 in San Francisco, only $43.00 in Poughkeepsie, N. Y., and $47.50 in St. Louis; also that while No. 2, V. G. 1x4 Douglas fir flooring sold in Portland, Oregon, for $57.00, it sold here for $77.00, and in Kansas City for $75.00. Who absorbs the freight differentials, and why?

How to Build Our Homes so They Will Not Burn

By LESLIE H. ALLEN, House Division,
Portland Cement Association

THE recent destruction of 1500 homes in the fashionable residence district of Berkely, California, has caused widespread interest in fire-proof construction, particularly roofing material. An attempt will be made to impose certain restrictions in rebuilding the burned district of the College City, and wherever possible fire-proof materials will be used. Many people who were burned out have expressed a desire to rebuild from their old plans, but architects whose services have been consulted, find that to use the same plans now will cost the owners nearly 100 percent more. With depleted finances, due to their losses, these people therefore are finding it no small problem to rebuild as thy would like to.

Mr. Leslie H. Allen's article which follows is replete with valuable suggestions:

THE problem of building fire-safe homes is of even greater importance than the problem of building fire-safe commercial buildings. The fire underwriters have for years been rendering a great service to industry in America by teaching manufacturers how to build fire-safe factories and insisting on fire-safe theatres, stores and churches, and in doing so they have reduced to a very large extent the fire risks and fire losses.

The fire underwriter can still further increase the service he is rendering to the community by joining in a movement for encouraging fire resisting construction in homes, for in them the annual fire loss is even greater than it is in factories and the risk to life is greater and facilities for fire fighting often absent.

Our huge annual fire losses (63 million dollars in residences alone) are causing increasing concern, and the conviction is rapidly growing that in the public interest and for public safety, the use of permanent, fire-resistant materials ought to be encouraged—especially as their relative cost today is so little in excess of less permanent materials. Existing iegislative restrictions on their full and free use ought to be examined and modified wherever present day experience shows this to be possible.

In this particular, the work of the Building Code Committee of the Department of Commerce is worthy of special mention and it is to be hoped that the adoption of the code prepared by this committee, with its reasonable regulations for the reduction of the thickness of masonry walls of brick, concrete or tile, and its provision for fire stopping and chimney construction, will soon become universal and lead the way to a greater use of fire-resistant construction.

The old idea that any incombustible material was necessarily fire-resistive has been the cause of many disastrous fire losses. It is recognized today that many materials that will not burn are failures as fire retardents. Materials vary greatly in thermal conductivity, in rate of expansion when heated and in strength after heating—factors that are of paramount importance in fire resistance. The fire-resistive qualities of a building material bear no relation to their strength or conductivity.

In building materials like gypsum, steel, clay tile, concrete block, lumber, cast iron and stone are found some qualities that are high in fire resistance and low in strength and vice versa and even those that are high in both vary a great deal in thermal conductivity, rate of expansion and contraction and other factors that affect their stability. Therefore each building material must be examined, tested and rated on its merits from the structural and fire-resistive point of view.

It ought not to be necessary to force people to build fire-safe homes

—common sense alone ought to impel them. But the trouble is that the public does not know the simple methods and economical materials that will ensure safety for him, and it may be difficult to arouse a public interest in fire-proof building because fire insurance rates are such a very small tax on his annual outgoings.

From the standpoint of economy there is very little encouragement to the home builder to spend more money in making his house fire-safe. But inasmuch as fire-resistive construction is also permanent construction, it makes a house rigid, free from maintenance, warm and dry.

With the aid of concrete construction the cost of a fire resisting house has been reduced to a point where it costs very little more than the ordinary type. The advantages of a fire-proof home, which used to be considered a luxury only available to the rich, has now been placed within the reach of the man of moderate means.

The rapid development of concrete units of light weight and low cost is making this possible. Concrete block and terra cotta building tile are now being used in many cities instead of frame construction, and as they make a perfect rigid non-yielding base for Portland cement stucco, a very beautiful house at low cost can be considered with their aid.

There are many builders who use this material continually and report that the diffirence in cost between that and frame construction is negligible. The Minneapolis Journal, which is now building three demonstration homes in Minneapolis to show the advantage of good construction and to explain methods of sound financing, found that on a $5,200 house the bids for concrete were only $135 more than frame (about 2½ per cent).

To build the walls alone of concrete is not sufficient. The whole of the interior of the house should be protected against fire. The most vulnerable points in any home are the cellar, the chimney and the roof. If wood floors are used in a house the underside of the first floor may be fireproofed by a ceiling of metal lath and cement plaster.

Tests have shown that this construction will resist the passage of flame for one hour; thus giving the occupants a chance to fight the flames before they have gained headway. Then the interior partitions in the cellar should always be of fire resisting construction. Four-inch concrete block or hollow tile are much better than the flimsy one-inch rough boarded partitions so commonly used.

Not only do they replace a lot of inflammable material but they afford rigid non-yielding support to the floors and upper partition construction of the house and obviate the need for the girders and slender steel columns, like toothpicks, that are generally used to support the floors.

Unprotected steel columns quickly buckle or give way when attacked by flame, and the whole of the interior collapses, and wood posts, of course, burn. A rigid fire resisting support of four-inch concrete prevents this and further prevents the slight settlements occasioned by the use of lumber that causes plastering to crack, doors to jam and floor joints to open.

The cellar steps should also be of concrete; thus sealing up the space beneath which is otherwise liable to fill up with rubbish and become a fire hazard or shelter mice and rats.

Partitions throughout the house may be built of metal lath now at a cost comparable with wood.

The roof is another fire hazard that we cannot afford to neglect. The only safe protection against flying brands in conflagrations or chimney fires is the use of a fire resisting roof. Most satisfactory is roofing tile, either concrete or terra cotta. Slates and asbestos cement shingles are widely used where their extra cost is not a prohibitive factor.

The eaves of a roof should also be protected with metal lath and cement plaster. Flames on adjoining buildings usually attack the eaves first as the hot gases drive the fire upwards until it reaches projecting surfaces like the eaves. Metal lath and cement plaster may be carried from the wall stuccoed surface across to the edge of the eaves, thus affording complete protection.

The use of concrete floors in living rooms and bedrooms has not yet become common, and it may be sometime before the home buying public is convinced of their comfort and economy. It is common practice in first-class hotel construction to lay a concrete floor covered with linoleum in all the rooms. This has been adopted with success by some architects and builders. It is found that concrete floors over a heated basement are actually warmer than wood floors; they hold the heat as the stones of a fireless cooker would.

When concrete is used for wall construction, it is advisable also to insulate the walls either by building an air space into the walls or by providing such an air space by lath and plaster, or by using one of the sheet insulating materials such as vegetable fiber or seaweed quilt before plastering. This is a positive insurance against possible condensation of moisture from the humid air and also considerably reduces coal consumption.

The "Fable for Builders," by Franklin H. Wentworth, Secretary of the National Fire Protection Association, is well worth repeating here:

"Last Summer a good Citizen of a certain town not over a hundred miles from Everywhere, built a Wooden house for a Woman and her children. He built the Chimney of Brick because he had to. The Chimney was able to Stand Alone, so he did not have to prop it with Wood. But the Floors of the house would not Stay Up without props. The Good Citizen saved a dollar by using the Chimney as a support to the floors. He nestled the ends of the Floor Joists nicely in the brick of the Chimney. He covered up the job and got his money.

"The Rains fell and the Winds blew in the most Biblical manner, and the Winter came after its fashion. The Chimney Settled a little; and there was a tiny Crack.

"One morning the Woman woke up with Fire all About her. She tried to get to her children. If she got to them no one Ever knew it. The Good Citizen who built the house was Not Arrested for Manslaughter. He is building Other houses of the Same Kind for Other women and children.

"He is making his Living by it."

* * * *

The Commercial Use of Electricity

Less than 25 years ago a prominent engineering firm submitted a report asserting that it would never be commercially practical to transmit power from Niagara Falls to Buffalo, New York, twenty miles away. Today transmissions of 100 miles or more are so common that they excite no comment. This single fact indicates the great strides made possible by engineering in the commercial use of electricity in recent years.

Portland Cement Stucco and the Surface Finish of Concrete Block

By FRANC J. GARDNER

(Concluded from the September Number)

CURING of the undercoats by sprinkling and protection of the finish coat against the sun, wind and rain and frost by means of tarpaulins are always to be recommended. This is not always feasible, however, and therefore specifications should insist only upon reasonable precautions. The application of cement stucco in freezing weather should be avoided, and in fact, temperatures slightly above the freezing point may allow frost to form on a damp wall. The application of stucco under such conditions is likely to result in failure.

Curing of Portland cement stucco is just as important as in the curing of any concrete product. The best and most feasible method is usually to spray the wall surface with water from a hose morning and night. The walls should not be just sprinkled but should be given a good soaking.

All coats should contain not less than three cubic feet of fine aggregate to one sack of Portland cement. If hydrated lime is used, it should not be in excess of 1-5 of the volume of the cement. A larger portion than this will cause a decrease in the strength of the mortar. This means that with every bag of cement there will be 1-5 of a cubic foot of lime which amounts to approximately eight to ten pounds. Hair or fibre should not be used over concrete block. As I mentioned before, it is only necessary to use this where metal lath is used over frame work.

Plastering itself should be carried on continually in one direction without allowing the plaster to dry at the edge. If it is impossible to work the full width of the wall at one time, the joining should be at some natural division of the surface, such as a window or door. In most moderate-sized houses, two plasterers working together can usually cover two sides of a house in one day with one coat of stucco. This, of course, varies largely with the size of the house and the ability of the plasterers themselves.

The first coat should cover thoroughly the base on which it is applied and should be well troweled to insure the best obtainable bond. Before it is set, it should be heavily scratched with the saw-toothed metal paddle or other suitable device to provide a strong mechanical key. A number of large nails driven into a one by two one inch apart can be used in a very effective manner. Another method which has been used with good effect to roughen up the surface is to brush the still soft mortar with a coarse broom. The latter method may in some instances cause the fresh mortar to slip away from the wall, so I believe the first-mentioned methods are preferable.

Whenever possible, the second coat should be applied on the day following the application of the scratch coat, and should be scratched in the same way as the first coat.

If necessary, the first coat should be dampened but should not be saturated before the second coat is applied. The second coat should be brought to a true and even surface by screeding it at intervals not exceeding five feet, and by constant use of straightening rod. When the second coat is stiffened sufficiently, it should be dry floated with a wood float and lightly and evenly cross-scratched to provide a good mechanical bond for the finish coat. The day following the application of the

second coat, and for not less than three days thereafter, the coat should be sprayed or wetted at frequent intervals and kept from drying out.

Whenever two-coat work is required, the first coat should preferably be "doubled," that is, as soon as the first coat is still rough, it should be followed by a second application of mortar, and this should then be treated as described for the second coat. The finish should be applied not less than a week after the application of the first coat.

The finish coat should not be permitted to dry out rapidly, and extra precautions should be taken by sprinkling frequently after the mortar is set hard enough to permit it, or by hanging wet burlap or other materials over the surface. As I mentioned before, the curing of stucco is just as important as the curing of your block in order to get the greatest strength from it.

Now we come to the matter of finishes for stucco. You are all familiar with the common dry pebble to crushed marble dash finish. These are obtainable with Portland cement stucco, although it takes quite a bit of practice in order to get the best results.

On the other hand, we have also the standardized types of finish, such as sand flott, stippled, spatter dash, etc. The latest developments in stucco finishes has been the realization of the real possibilities that are latent in Portland cement mortar. The variety of textures that can be obtained is limited only by the imagination and ingenuity of the plasterer and those who direct his work. Any number of methods can be used in the application of stucco from special tools to the bare hands. Most of the effects, however, can be obtained merely by varying the manipulation of the ordinary trowel. It is not a simple matter to describe exactly how these various textures are obtained. A clever man can in a few trials imitate any finish shown in a picture. Many times new and far more interesting finishes are obtained by an attempt to imitate a texture which it is desired to copy.

Stucco can be colored in two ways: Either by the use of mineral pigments or by using a colored aggregate. The latter method is preferable, although it is limited because of the difficulty in obtaining the proper colored aggregates. We are, therefore, forced to the use of mineral pigments which, as I mentioned before, are not entirely satisfactory. Mineral pigments are very finely ground inert materials. For this reason it is not advisable to mix too great an amount of these coloring materials with the cement. For this reason, white Portland cement is highly desirable, since it does not obscure the colors that are used and a smaller amount of color will give a greater brilliancy to the tint. This is very easily demonstrated. You all know that a painter who wants red paint or blue paint or green paint does not start out with gray. He will mix his pigment with white lead.

The mineral pigments are most satisfactory in reds, yellows and blacks. Greens and blues are very difficult to obtain and are rarely permanent. The coloring matter should be a natural mineral pigment of about the same specific gravity as the cement in order that it will be uniformly distributed throughout the mortar and not have a tendency to float to the top in mixing. As I mentioned before, there are a number of manufacturers who specialize in making coloring pigments for cement, and it is advisable to use these materials. Aniline dyes should never be used, since the cement acts upon them chemically and fades their color. Solutions of mineral salts are sometimes used as a wash. Notable results have been obtained in the south in Florida by Mr. Hugh Orr, who does an enormous amount of stucco work in that territory.

So much for stucco. We will now take up the matter of facings for concrete blocks. We have all come to realize that far more attention should be given to beautifying concrete block—in other words, producing such a block as will enable you to sell them not only for foundations but for work above the surface. In the end, it will prove more than worth while, for in that direction lies a great possibility for the growth of the concrete block industry. We have seen how we can put a pleasing and lasting finish on a rough-textured concrete block by means of stucco, however, as you all know, and there may be some among you who are prejudiced against the appearance of stucco or who would like to have a house built of stone. Stucco is, of course, the easiest and probably the most economical solution to the problem of getting the concrete block above grade. But there are many who will prefer a concrete block with no attractive surface finish to stucco just for the sake of variety or perhaps because of personal preference.

There is no question but that the usual concrete block is monotonous in appearance. Its uniform texture, dull gray color and the lack of contrast are displeasing to most people. The first attempt at solution of this problem was the casting of the block in imitation of stone, but that did not remedy the drawback because the sameness of the rock-faced block with an imitation rock face or dead, gray cement color will always have a limited field. It may be structurally strong and satisfactory, but from the viewpoint of appearance it is unattractive.

The use of white Portland cement for facing makes it possible for manufacturers of concrete block and brick to give their products a variety and beauty of finish that can hardly be obtained with regular gray Portland cement. The same truths hold good in the facing of block with a white cement as held in the use of white cement for a finish coat for stucco work. Those who have tried the making of attractive facings by the use of colored aggregates and white cement have found that a block or brick finished has a far greater sales value, because it is undoubtedly more attractive than the ordinary block. It will sell at a higher price, and owners and architects will employ such products when they will not consider for exterior use a block or brick made with the usual finishes.

Attractive appearance is assured by making the surface that is out of the ordinary, either in texture or color. Rough textures can be secured, for example, by using the coarse materials throughout, so that when the block is removed from the machine the surface is rough. There is no definite formula for producing such a surface, and only experience will show what can be done with a given aggregate.

The most satisfying finishes, however, are those which can be produced by using a colored crushed stone with white cement or with white and gray mixed. As you all know, colored stone chips are now marketed by many concerns, both for this purpose and for use as a dry dash with stucco. Coloring pigments are sometimes used, but the results cannot be said to be as attractive as when a colored aggregate is employed. In general, the preference is for the lighter and more subdued color effects, which are obtained by the colored aggregates with a lighter background of cement. At a short distance the various colors blend into effects that are extremely pleasing.

One very striking recent example of this is the "Fountain of Time" in Chicago, which was made of concrete, using a special selected colored aggregate. At a distance of about twenty feet from the statue the colors of the white cement background and the various shades of buff aggre-

gate used seem to blend, but at the same time there is not the monotony of a plain surface of one color. There is certain life such a surface has which cannot be obtained in any other way.

In general, machines cast block with the face either in the bottom of the mold or at one side. When the block is cast face down, the placing of a facing mixture is a very simple matter. The required amount of surfacing material, which should be sufficient to form a layer from ½ in. to 1 in. thick, is placed in the bottom of the mold. Care should be exercised to make certain that it is very nearly the same thickness throughout and that it is well packed into the corners, so that there will be no possibility for the backing material to come through. It is often best to bring the materials slightly up on the sides, so that if the block is laid with a raked joint the edges of the block show the same color as the face. This is really standard practice for those engaged in the making of faced cast stone and faced block.

Where the face of the block is vertical, the placing of the facing is a little more difficult, but good results can easily be obtained. In such machines a dividing plate is used, allowing the facing mixture to be placed along the sides to the required thickness. The backing material is then placed, division plate removed, and the whole compacted to bond thoroughly the face and backing. If the facing mixture is merely white cement and sand, usually no further treatment is necessary. A mixture for such a facing should not be richer than one part cement to two parts sand, and may be made with one part cement to three of sand. As a precaution, it is advisable to use a rose spray on the facing as soon as it is taken out of the mold or within half an hour or so, in order to remove finely divided material and cement which may have come to the surface.

Facing mixtures of crushed stone or small pebbles are usually made of one part white cement and two or three parts of aggregate. If there is no fine material of the fineness of sand in the aggregate, a small proportion of sand is sometimes necessary, but generally none is used.

Surfaces of this type must be treated to expose the aggregates by removing the film of cement on the surface of the particles and thus allowing their true color to show. Several methods of accomplishing this are in use. The most generally used and the simplest is to remove the film of cement by using a spray of water on the block as soon as possible after casting. Several variations of this method are in use. Some utilize a very fine spray under considerable pressure immediately after the block is cast, with the face of the block horizontal. It is claimed that this allows more water to enter the block, so giving greater strength. In other cases the face is vertical, though this is sometimes objected to, as there is a tendency for the washed-off cement to collect at the bottom of the face and cause streaking, and for the water running down to make the bottom of the block too soggy.

Another method is to use a fine light spray and brush the aggregate gently with camel's hair brush immediately after casting. In doing this, care must be taken not to brush with sufficient force to dislodge any of the aggregate or to spoil the corners.

Some manufacturers wait until the block is hardened several hours and then wash the face with a stiff fibre brush, using a spray of water to carry away the scrubbed-off materials. Another method is to wash the face of the block with a solution of four parts of water to one part commercial muriatic acid after the block has hardened—say 24 hours after it is made. Care must be taken to see that all excess acid is removed by washing with plenty of clean water.

THE
Architect and Engineer
Incorporated
Founded 1905 by E. M. C. WHITNEY
W. J. L. Kierulff - President and Manager
Fred'k W. Jones - Vice-Pres. and Editor
G. H. Oyer - - - Advertising Manager
L. B. Penhorwood - - - - Secretary
T. C. Kierulff - - - - - - - Attorney
Associate Editors
Irving F. Morrow - -Architectural Critic
Chas. H. Cheney - - - - City Planning
Chas Peter Weeks - - - - Book Reviewa
Emerson Knight, Wilbur D. Cook } Landscape Architecture
Wm. B. Gester - - Inspection and Tests
O. P. Shelley, C. E., F. W. Fitzpatrick } Fireproof Construction
T. Ronneberg, C. E. - - Structural Steel
W. H. Lowe - - - - Roofs and Roofing
Fred'k N. Woods, Jr. - - Rock and Gravel
Chas. Felix Butte - Electrical Construction
J. W. Fricke - - - - School Equipment

Published Monthly in the Interest of the Architects, Structural Engineers, Contractors and the Allied Trades of the Pacific Coast by The Architect and Engineer, Inc.

PUBLICATION OFFICE:
627-629 Foxcroft Building, San Francisco
Telephone Douglas 1828

The publishers disclaim any responsibility for statements made in the advertisements of this magazine.

Terms of Subscription
(Including postage) to all parts of the United States, $2.50 per annum; to Canada 75c additional; to all Foreign points $1 additional

Vol. LXXV OCT., 1923 No. 1

WHAT AILS THE ARCHITECT?

Attention was called the other day to a list of building permits, or rather applications for building permits, that had been filed with the San Francisco and Oakland Building Inspectors. The buildings ranged from a story and a half cottage, costing $5000, to an office building, valued at $50,000, and an apartment house costing $60,000. Out of twenty-five applications filed that day with the San Francisco inspector, the names of only two architects appeared as having designed any of the buildings—the remaining twenty-three were, so far as the records showed, designed by the owner or contractor. In Oakland, out of fifteen applications, there was not a single architect mentioned.

Here, surely, is food for thought. Why is it so few architects are being employed on work that should require professional advise? What is wrong with the profession?

Is it not a fact that in our big cities the architectural profession has found itself divided into three classes, to wit: the so-called big fellow who, unfortunately, holds himself aloof—seemingly content to do the better class of business that comes to him through his club affiliations and friendship with persons of influence, without a second thought for the less fortunate. Second, the middle man who strives to abide by the ethics of the profession and at the same time earn a decent living. Third, the architect (he does not deserve to be called architect) who will take a job for what the owner is willing to pay, unmindful of the impression that such a policy may leave upon his client.

Can you blame the layman who is unfamiliar with the ethics of the profession, or the established fees for services rendered, if he thinks lightly of the architect and his ability when some chap, perhaps highly recommended to him, comes forward with a set of plans and specifications and charges but a few dollars for them? Familiarity with building conditions convinces one that a lot of this thing is being done and the fact that no names appear on many of the blue prints gives the designer the protection he wants for having done his work so cheaply. He thinks nobody but himself and the owner are the wiser and when the plans are taken to the city hall for a permit the record will be found to read something like this: — "Owner and Builder Mr. .....; Architect, none."

Why cannot all of our architects —yes, all three classes as mentioned above—get together and work out a plan that will be for the good of the profession, for

SAN FRANCISCO PUBLIC LIBRARY

the good of the owner and for the good of the community? It can't be done, some one says. It can be done, and one way to bring it about is to frame a law that would impose a fine upon owner or builder seeking to erect a building costing in excess of say $5000, unless the plans carried the stamp of a registered, honest-to-goodness-architect.

AMERICAN BUILDINGS WITHSTAND JAPANESE EARTHQUAKE

American concrete and steel buildings in Tokyo and Yokohama withstood the earthquake shock and are in good condition, according to a cable from Assistant Trade Commissioner G. C. Howard at Kobe. Officials of the Department of Commerce at Washington, expressed gratification over the first practical demonstration of the effectiveness of the new so-called earthquake-proof factories and office buildings which have been constructed within the past three years. There are about six of these buildings in Tokyo. The fact that this construction has proven earthquake proof is likely to influence favorably the adoption of this type of construction in the future.

Unofficial reports also indicate that the Imperial Hotel, designed by Architect Frank Lloyd Wright of Los Angeles, withstood the earth stresses far better than any other large building in Tokyo. This, if true, speaks eloquently for American design, and doubtless will lead to a general adoption of the Wright idea by the Japanese in rebuilding their devastated cities.

COURT DEFINES RESPONSIBILITY

The term "lowest responsible bidder," which long has been a perplexity in its actual application to conditions surrounding the making of awards, has been analyzed officially to the degree of forming the subject of a decision by the Pennsylvania Supreme Court.

As interviewed by the court, this term does not mean the lowest bidder in dollars; "nor does it mean the board may capriciously select a higher bidder regardless of responsibility or cost."

Continuing to outline the dictates of the term, the court says:

"Officials should investigate the bidders to learn resources, facilities, judgment and efficiency as builders. This was not done in the case in point. The court below censures the board for omitting this important step, but it holds, inasmuch as they had ample knowledge of the successful bidder and the merit of its work, the contract could be awarded. This might do in private affairs, but will not pass when public funds are at stake; the directors were not bound in law to give the contract to the lowest bidder, who might be irresponsible; they were bound to investigate, and if a bidder measured up to the law's requirement as a responsible party, the board could not capriciously award the contract to another.

SPECIFICATIONS FOR CONCRETE FLOORS

What architect or engineer would permit important work to be done without specifications? None, surely, because designers realize that specifications correctly written in accordance with recognized principles constitute half their battle for a well-built, satisfactory structure.

And the more important the work the greater the need for specifications to control its every detail. Take concrete floors, for instance: no part of any building is subjected to greater wear, tear and abuse. To permit them to be built without the best specifications obtainable would lead to uncertain and often unsatisfactory, if not disastrous results.

The Portland Cement association

is to be commended for having published, for the benefit of architects and engineers, an authorized reprint of specifications approved by the American Cement Institute, together with helpful notes and information related to the subject of cement floors.

The book is intended to serve architects, engineers and designers by eliminating the uncertainty in floor construction and obviating a great deal of needless experimentation.

CONSTITUTION DAY TO BECOME A FIXED CELEBRATION

The annual observance of September 17th as Constitution Day in honor of the fact that it is the anniversary of the signing of that great charter, is a custom altogether worthy of continuation and perpetuation. Thanks to the Kiwanis Club International, the day was widely celebrated this year, and it is proposed to hold a nation wide celebration of the event each year; the week of September 16-22 to be known as "Constitution Week."

Because of too much ignorance of the Constitution as a whole, and too little faith in its great principles, the peril of the present day is great. James M. Beck, Solicitor General of the United States, sums up the question splendidly in these words:

"The Constitution of the United States with its fine equilibrium between efficient power and individual liberty, still remains as a form of government the best hope of the world. If it should perish, the cause of democracy would receive a fatal wound, and the best hopes of mankind would be irreparably disappointed.

"This, or any constitution can derive no strength from parchment or red seals. Its efficacy and permanence must depend upon the people. Our Constitution could never have come into existence if the American people, in 1787, had been unworthy of it or incapable of administering it.

"If and when our people cease to be worthy of it, the Constitution will cease to function and will enevitably perish. In this, lies the peril of the present day; for there is with many people too much ignorance of our Constitution and too little faith in its great principles. It may be gravely doubted whether our heterogeneous democracy, composed of so many classes, races, interests and creeds, and governing so vast a continent could escape cureless ruin, if the Constitution no longer co-ordinated the vast energies of our people by the reign of law."

SHOULD INSIST ON AMERICAN OAK FLOORING

It appears that considerable Japanese oak is being sold in the San Francisco market as a substitute for American oak flooring. If architects and owners are not insistent when specifying or buying oak floors they are likely to have the foreign product substituted without their knowledge.

According to an authority on hardwood flooring there is a vast difference in the wearing qualities of the two woods. Japanese oak is said to be very brushy and brooms up and will not wear like the American product. In short, there are cases on record where Japanese oak flooring has given such poor satisfaction that the owner, upon discovering it was not American oak flooring, has ordered the floor torn up and replaced with native material.

A Professional Duty

Many suggestions have been made as to how to provide the skilled mechanics needed in the building industry. Many large building operations have been either delayed or abandoned due to the present scarcity of mechanics.

The unions claim that it is not their fault; contractors maintain that they are not to blame and neither interest is apparently interested in arranging for a proper apprentice system, to supply the men which must be provided to take care of future building needs. It is therefore obvious that some other interest must undertake this big problem.

We have suggested that our public school system might be called upon to provide the needed training schools and in this way provide a portion of the men who must be recruited to fill the ranks of the building trades.

It is regrettable that contractors' associations and the labor unions find themselves unable to meet the situation, but facts are stubborn things and if those particularly interested cannot solve the problem, other interests must step in just as the Citizens' Committee was called into existence when the Contractors' Association of Chicago admitted their inability to cope with the situation confronting the building industry after Judge Landis had made his notable award. Some agency must be found big enough and strong enough to take hold of the apprentice question and properly train the mechanics which are so needed not only to fill the depleted ranks of the skilled trades, but to increase their ranks sufficiently to take care of the needed construction and thus do away with the present opportunity to demand and receive bonuses and the unjustifiable high wages.—Bulletin of Illinois Society of Architects.

THE QUESTION DRAWER

Formula for Concrete Mix

Editor The Architect and Engineer:

Sir:—We would like to obtain a formula for the proper proportioning of cement, rock, sand and water for concrete—a simple formula only and one that can be used on the job from time to time; also a method of testing same as the work progresses, to see that we are getting the proper efficiency.

We do not want a lot of technical detail or data but something that the average field foreman can readily and easily understand.

If you can furnish this information to us or advise where we can obtain same, we will be very much obliged.

Yours very truly,
CURRIE & DULGAR,
Bakersfield, Cal. by J. A. CURRIE.

For an answer to Mr. Currie's inquiry the letter was submitted to Mr. John Grace of Grace & Bernieri, well-known San Francisco contractors, who furnished the following information:

"For all-round concrete work, use 4 cubic feet of rock, 2 cubic feet of sand and one sack of cement. Water to be governed by consistency of concrete required. Do not make the concrete any wetter than is absolutely necessary for the proper filling of forms. Sand will have to be varied according to the voids in the rock which must be judged as the rock is delivered. In thin walls the proportion should be: 3 cubic feet of rock, 1 cubic foot of gravel and one sack of cement. The gravel will allow the concrete mix to run freely in the forms and fill them more easily. There is no progressive method of testing the work or the mix except a seven days set of the concrete in the forms."

BOOK REVIEWS

Edited by
CHARLES PETER WEEKS

Acoustics of Buildings, by F. R. Watson, published by John Wylie & Sons, New York. Cloth, 6 x 9 inches, 162 pages, 72 figures, price $3.00.

This book is the first complete volume on the subject of acoustics. It covers the results of the experiments of all past investigators. It is concise and in a form that can be easily understood and used in practical problems. I regret that there was not sufficient delay in publication to enable Professor Watson to avail himself of the information contained in an article in the "American Architect" of July, 1923 by Paul E. Sabine. The article by Mr. Sabine gives conclusions in regard to soundproofing of rooms, establishing the fact that as far as is known at the present time, the soundproofing is directly related to the mass of the obstruction.

Domestic Sanitation and House Drainage by Henry C. Adams, price $2.00.

This book may be of use to the English architect, but illustrates old fashioned practice as far as this country is concerned. There are many publications on the subject by domestic authors that are of greater value. In fact, it is a pity that the English do not try to follow our practice in matters of this nature.

Apartment House Work

Architect C. A. Meussdorffer, Humboldt Bank building, San Francisco, has awarded a contract to Messrs. Grace & Bernieri to build a ten-story and basement reinforced concrete apartment house on Green street, between Jones and Taylor streets, San Francisco, for Dr. C. R. Bricca. The building will cost $180,000. Mr. Meussdorffer has also prepared plans for an extensive addition to the ten-story Class A apartment house at 2006 Washington street, San Francisco, estimated to cost $640,000. Robert Trost has been awarded the contract for the concrete work at $153,974.

American Institute of Architects

(ORGANIZED 1857)

San Francisco Chapter

OFFICERS FOR 1923-24

PRESIDENT.....GEORGE W. KELHAM
VICE-PRESIDENT.....HENRY H. MEYERS
SECRETARY-TREASURER.....J. S FAIRWEATHER

DIRECTORS

WILLIAM MOOSER.....THREE YEARS
J. H. BLOHME.....THREE YEARS
A. J. EVERS.....TWO YEARS
HARRIS ALLEN.....TWO YEARS
S. SCHNAITTACHER.....ONE YEAR
MORRIS M. BRUCE.....ONE YEAR

Oregon Chapter, Portland

PRESIDENT.....CHARLES D JAMES
VICE-PRESIDENT.....FOLGER JOHNSON
SECRETARY.....WILLIAM L. SMITH
TREASURER.....ORMOND R. BEAN

DIRECTORS

WM. C. KNIGHTON WM. G. PURCELL JOHN V. BENNES

Southern California Chapter

PRESIDENT.....SUMNER P. HUNT
VICE-PRESIDENT.....A. M. EDELMAN
SECRETARY.....CHAS. F. PLUMMER
TREASURER.....ALFRED W REA

DIRECTORS

C. E. NOERENBERG.....ONE YEAR
DAVID J. WITMER.....TWO YEARS
EDWIN BERGSTROM.....THREE YEARS

Washington State Chapter

PRESIDENT.....CARL F. GOULD
SECRETARY.....A. F. MENKE
TREASURER.....CARL SIEBRAND
FIRST VICE-PRESIDENT.....LOUIS BAEOER
SECOND VICE-PRESIDENT.....ROY S. MASGN
THIRD VICE-PRESIDENT.....GEORGE H. KEITH

San Francisco Architectural Club

77 O'Farrell Street

PRESIDENT.....MARK T. JORGENSEN
VICE-PRESIDENT.....EDGAR B. HURT
SECRETARY.....CARL R. SCHMIDTS
TREASURER.....LAWRENCE H. KEYSER

DIRECTORS

WILLIAM ROWE FELIX RAYNAUD J. B. McCOOL

California State Board of Architecture

Northern District

Phelan Building, San Francisco

PRESIDENT.....CLARENCE R. WARD
SECTY. & TREAS.....SYLVAIN SCHNAITTACHER

233 Post Street

EDWARD GLASS JOHN J. DONOVAN JAMES R. MILLER

Southern District

Pacific Finance Bldg., Los Angeles

PRESIDENT.....WILLIAM J. DODD
SECTY. & TREASURER.....A. M. EDELMAN
JOHN PARKINSON MYRON HUNT W. H. WHEELER

Inflammable Roofs Barred

Both the Berkeley and Oakland City Councils have passed new ordinances prohibiting the use of inflammable roofing material, as a result of the lesson taught by the recent Berkeley conflagration which experts declare would have been comparitively small in scope but for the wind-swept fire brands which ignited the shingle roofs of many houses and thereby caused the fire to spread over 50 or more blocks before brought under control.

The following is the exact wording of the Oakland Ordinance:

"No roof of any building constructed hereafter outside the fire district unless the same is covered with fire resistant roof material. For the purpose of this ordinance fire resistant material is defined to be any roofing material, including wooden shingles impregnated or painted with fire retardents, which, in the judgment of the chief of the fire department, determined by uniform tests devised by him, will not, when used as a roof covering, ignite from such fire brands as might be carried by air currents from a burning building, and will not, when torn loose from the roof of a burning building, be capable of becoming fire brands."

Engineer Nominated

Mr. C. E. Grunsky of San Francisco, widely known as a consulting engineer, has been made the official nominee for president of the American Society of Civil Engineers by a vote of 1671 against 1509 cast for Francis Lee Stuart. The other official nominees determined by the second letter ballot were:

For vice-president, Zone 1, Lincoln Bush; vice-president, Zone 4, Oscar S. Bowen; directors, District 1, Thaddens Merriman and Paul G. Brown (two to be elected in this district); director, District 4, Robert Farnham; director, District 11, Arthur O. Ridgeway; director, District 14, Alexander Maitland, Jr.; and director, District 15, J. M. Howe.

George G. Anderson of Los Angeles, received support from members in Zone 4 for vice-president, getting 399 against 520 cast for Oscar S. Bowen.

Architect May Lose Sight

An explosion of a glass bulb containing oxygen may cost Roy Bancroft, Oakland architect, residing at the Sequoyah Country Club, his sight. Mr. Bancroft, on September 7, was experimenting in his office at the St. Mark's Hotel. In a glass bulb was the oxygen under pressure. The architect was bending over the bulb when it exploded, showering his face with broken glass.

With the Architects

Building Reports and Personal Mention of Interest to the Profession

Honor for E. G. Bangs

Architect E. Geoffrey Bangs of San Francisco, has been appointed director of housing for the California State Commission of Immigration and Housing. Mr. Bangs attended the University of California and was graduated with honors in architecture, receiving later the degree of master of arts. Upon completion of his studies, he associated himself with Mr. John Galen Howard, university architect. During the war Mr. Bangs enlisted with the American forces and following the armistice was attached to the army education commission as an instructor in architecture and supervising for the A. E. F. University of France.

Paso Robles School

Plans are being completed by Architect Orville L. Clark, 923 Chapman building, Los Angeles, formerly of Bakersfield, for the new Union High school building at Paso Robles, and for which $200,000 bonds were voted recently. The building will be constructed of concrete and brick.

Berkeley Office Building

Plans are being prepared by O'Brien Bros. of San Francisco, for a five-story reinforced concrete dentists' and physicians' office building for Mr. Louis R. Lurie to be erected on the corner of Telegraph avenue and Channing way, Berkeley. The building, which will cost $165,000, has been leased to Dr. Simpson.

Bachelor's Hotel

Plans have been completed by Architects Baumann & Jose, 251 Kearny street, San Francisco, for a six-story and basement reinforced concrete bachelor's hotel to be erected on Sutter street, west of Jones, San Francisco, for Mrs. James Welch. There will be 110 rooms. The estimated cost is $160,000.

Richmond Residence

Plans have been completed by Architect James T. Narbett of Richmond for a Spanish type residence to be built in that city for Mr. W. P. Helms, superintendent of schools, Richmond.

Fresno Firm Expands

Expansion of the architectural firm of Trewhitt-Shields Co. of Fresno, bringing into the concern Mr. H. Rafael Lake and Mr. R. Raymond Fisher, is announced by Messrs. H. W. Shields and W. D. Trewhitt. At the same time the firm announces the opening of a Los Angeles office in the Western Mutual Life building, with Mr. Fisher in charge. The main offices of the company will continue to be located in the Rowell building, Fresno.

Theatre and Store Building

Architects Morrow and Garren, Chronicle building, San Francisco, are preparing working drawings for a Class A threatre and group of stores covering an 800 foot frontage on Third avenue, San Mateo. Later on it is proposed to construct a large hotel. The estimated cost of the improvements is $350,000. Mr. B. Getz is the owner.

Oakland Hotel

Plans have been completed by Architects Morrow and Garren, Chronicle building, San Francisco, for a $60,000 reinforced concrete hotel, three stories and basement, to be erected at Fifth and Clay streets, Oakland, for Mr. J. Porro. The building will contain a large restaurant and seventy rooms.

Class C Hotel

Architect Leonard L. Jones, 603 Grosse building, Los Angeles, has completed plans and is taking bids on general construction for a 4-story class C hotel building, to be erected at 910 W. 10th street, Los Angeles, for Mrs. Thomas.

Class A Building

Architects Curlett & Beelman, 408 Union Bank building, Los Angeles, are preparing plans for a twelve-story and basement bank and office building to be erected at First street and Pine Ave., Long Beach, for the Security Trust & Savings Bank. It will cost $1,000,000.

Hotel for Antioch

Preliminary plans have been drawn for a $100,000 hotel at Antioch by Architect Walter O. Lewis of San Francisco.

San Francisco Architectural Club

An enjoyable excursion was made by members of the San Francisco Architectural Club September 15th to the plant of the Paraffine Companies, Inc., at Emeryville. Upon arrival at the plant a bountiful luncheon was served, after which the guests were conducted through the plants where they learned much regarding the manufacture of paraffine products.

Mr. Edward L. Frick is now patron of the Atelier and will contiue as such during the ensuing year with the co-operation of Mr. Ernest Weihe. The students have done excellent work since Mr. Frick has had charge, and a good year is looked forward to. The 1923-24 Atelier season opened Saturday, September 22nd, with an enrollment of about 15. In connection with this, a free-hand drawing class has been organized with Mr. Ralph Wilkins of the California School of Fine Arts as instructor. This class has started with a good enrollment, and it is intended to change it to a Life Class as soon as the present course is finished.

Mr. John H. Geering has resigned his position as Sous-Massier of the Atelier to go to Pennsylvania where he will attend the State University, Department of Fine Arts. Mr. Harry Langley has been appointed to succeed him.

The following members were elected at the last regular business meeting, September 5th: Messrs. Clarence O. Peterson, Chris Mueller, Jr., Wilmoth D. Waterman, and Charles F. Cobbledick.

An address recently delivered by Supervisor Jas. B. McSheehy, of the Board of Supervisors of San Francisco, on the work completed by the city at the Hetch Hetchy power site, was listened to with much interest by the club members. Mr. McSheehy, because of his position, was thoroughly familiar with his subject and its problems and displayed great alacrity in dealing with pointed questions directed to him during the course of his remarks.

Important amendments to the constitution and by-laws were passed at the last business meeting held August 1st. One of such amendments created a new class of membership to be known as "Student Members." Included in this class are any persons attending a school of architecture of recognized standing as a day student, such as the University of California, Stanford, etc. The dues are fixed at $5.00 per year. This will enable many students of these schools to join who have heretofore found the dues for regular membership too high.

Another amendment passed at the same meeting was one more definitely fixing the boundaries of the non-resident classification. Heretofore those living outside a radius of 50 miles of San Francisco were eligible for non-resident membership, but on account of the difficulty of determining a 50 mile radius, it was changed to extend this privilege to anyone living outside of San Francisco, San Mateo, Alameda and Marin counties. It is necessary that his place of business also be outside these counties.

Architectural Club of Long Beach

The Architectural Club of Long Beach, which was organized with only 15 members, now has more than 70 enrolled. Monthly meetings are held in the Municipal clubhouse, and as most of the business of the organization is transacted by the executive committee, the time of these meetings is kept free for instructive work and for sociability.

Officers of the club are: Messrs. W. Horace Austin, president; H. H. Lochridge, first vice-president; Francis Gentry, second vice-president; Matt Piper, secretary; R. D. Van Alstine, treasurer; Vern Hedden, sergeant-at-arms.

Architects' Homes Destroyed

Architects whose residences were burned in the Berkeley fire included John Galen Howard, Bernard Maybeck, and A. F. Herd of Masten and Herd. All expect to build new homes in the same locality. Architect James W. Plachek had two house under construction in the burned district, neither of which was damaged, although the buildings near them were destroyed.

Scottish Rite Cathedral

The Scottish Rite Cathedral Association of Sacramento have purchased the block bounded by 28th, 29th, K and L streets, Sacramento, as a site for a new Cathedral. No architect has been selected as yet.

To Beautify Garden

Emerson Knight, landscape architect and engineer, 9 Geary street, San Francisco, is planning revisions including new plantings and features for the garden of Mr. and Mrs. Lester L. Morse, 1410 The Alameda, San Jose.

Berkeley Residence

Plans are being drawn by Architect W. H. Ratcliffe, Jr. for a $15,00 residence at Euclid and Cedar streets, Berkeley, for Mr. J. S. Kingsley, whose home was destroyed in the recent fire.

San Francisco Architectural Club 21st Anniversary Banquet

THE 21st anniversary banquet of the San Francisco Architectural club held in the Plantation room of the Palais Royal on Friday, September 28th, proved one of the most enjoyable events in the history of the club.

The banquet was given in honor of the charter members and was attended by 70 or more guests. The charter members present were: Messrs. August G. Headman, Arthur S. Bugbee, Harry E. Nye, P. Brouchoud, George Wagner, Arthur T. Ehrenpfort and John H. Ahnden. Charter members who sent regrets were: Messrs. H. M. Smitten, F. A. Farnkopf, A. O. Johnson, Albin R. Johnson, E. G. Bolles and H. G. Corwin. The honorary members attending, who were also invited guests, were Messrs John Bakewell, Jr., Arthur Brown, Jr. and Clarence Ward.

President Mark T. Jorgensen, after offering a toast to the guests of the evening, introduced Mr. Headman, who acted as spokesman for the charter members. In reviewing the early history of the club, Mr. Headman sprung a surprise by producing a record book containing the original minutes of the first meeting of the San Francisco Architectural club, September 28th, 1921, in the handwriting of Mr. George Wagner, then acting secretary. As Mr. Headman pointed out, this so-called anniversary banquet was in fact a 22nd anniversary banquet. These minutes were presumed to have been destroyed in the fire of 1906, but were found by Norman Mohr, secretary at that time, only two days previous to the banquet among some old papers which he had saved from his office during the conflagration. Interesting talks were made by Messrs. Arthur Bugbee, Harry Nye, George Wagner, A. T. Ehrenpfort, John Bakewell, Arthur Brown, Clarence Ward, P. Brouchoud, John H. Ahnden and a number of past presidents of the club.

Messrs. Edward L. Frick and Ernest Weihe, patrons of the Atelier, spoke of the progress now being made in that class and displayed much enthusiasm for its future. It was when Mr. Weihe suggested that it would be an excellent thing if the Pacific Coast Scholarship could be revived, that things took a turn which were entirely unexpected, but which added greatly to the enthusiasm of all. Mr. Ward proffered to start such a fund with a very liberal contribution himself. The response was instantaneous, and contributions came so quickly that the secretary experienced difficulty keeping account of them. In a brief time over $1600 was subscribed. President Jorgensen then appointed a committee of five, consisting of Messrs. Ward, Wagner, Headman, Bakewell and Arthur Brown, Jr., to work out further necessary details in connection with the Scholarship which will be given at the close of the 1923-24 Atelier season.

An artistic souvenir menu designed by Mr. Edward Eames and contributed by the Standard Blue Print company through Mr. J. F. Cronin, was placed at each plate.

The Charter Members were each presented with neatly engraved certificates of Honorary Membership and a key to the club. Among the toasts offered by Mr. Headman was one in honor of the charter members who had passed away.

The success of the affair was due to the efforts of Messrs. Wilton Smith, chairman of the entertainment committee, and Mark T. Jorgensen, president of the club.

Personal

Mr. Scott Quinton has formed a partnership with Mr. Thomas L. Kerr, with offices at 310-311 Weber building, Alhambra. The firm name will be Quinton & Kerr, architect and engineer.

Architect James W. Plachek of Berkeley, has been appointed a member of the Berkeley City Planning Commission to fill the vacancy caused by the resignation of Mr. George Schneider.

Architect Frank Lloyd Wright has moved his office from Harper Ave. to 1600 N. Edgemont Ave., Olive Hill, in East Hollywood. Mr. Wright is fitting up offices in his residence at the new address.

For the Practice of Architecture

Mr. John Galen Howard, architect, announces his association with Messrs. E. Geoffrey Bangs, Henry C. Collins, Henry Temple Howard and Charles F. B. Roeth, for the practice of architecture under the name of John Galen Howard & Associates, First National Bank building, San Francisco.

Architect's Office Burned

On the morning of September 17th, the offices of Architect Glenn Allen, in the Georges building, Stockton, were completely destroyed by fire. Mr. Allen has since moved into new offices in the Union block, 41 South Sutter street, Stockton, and will be pleased to receive trade catalogues and building material samples.

Prizes Awarded in Small House Competition

FOLLOWING are the awards made in the competition for the best plans for a small house, conducted by the Community Arts Association of Santa Barbara:

First prize, $500—W. L. Moody, 1528 Sixth street, Santa Monica.

Second prize, $200—A. McD. McSweeney, 1513 West Twenty-ninth street, Los Angeles.

Third prize, $100—Leffler M. Miller, 1154 West Forty-second street, Los Angeles.

Fourth prize, $20—Harrison Clark, 1107 Hibernian building, Los Angeles.

Fifth prize, $20—H. G. Lewis, 1130 Van Nuys building, Los Angeles.

Sixth prize, $20—Howard S. Richmond, 607 Union Bank building, Los Angeles.

Seventh prize, $20—Everett Radcliffe Harmon, 1133 Lodi street, Los Angeles.

Eighth prize, $20—Leffler M. Miller, 1154 West Forty-second street, Los Angeles.

(Hors-de-Concours awarded eighth prize, but under terms of competition, money goes to next award.)

Ninth prize, honorable mention—L. Gail McCully, 625 Washington building, Los Angeles. (First honorable mention receiving money prize, as noted above.)

Tenth prize, honorable mention—John F. Murphy and C. F. Cullity, 1206 Fay street, Santa Barbara.

Eleventh prize, honorable mention—Frederick A. Eastman, 415 Bank of Italy building, Los Angeles.

Twelfth prize, honorable mention—Ted Fletcher, 1224½ Fifth street, Santa Monica.

Thirteenth prize, honorable mention—Leffler B. Miller, 1154 West Forty-second street, Los Angeles.

Fourteenth prize, honorable mention—Lee F. Fuller, 1800 West Thirty-ninth street, Los Angeles.

Joe's Diagnosis

A colored man, entering the general store of a small town, complained to the storekeeper that a ham that he had purchased there a few days before had proved not to be good.

"The ham is all right, Joe," insisted the storekeeper.

"No, it ain't boss," insisted the other. "Dat ham's sure bad."

"How can that be," continued the storekeeper, "when it was cured only last week?"

Joe reflected solemnly a moment, then suggested: "Maybe it's done had a relapse."

Industrial Accident Commission

As has been found the case every year the approach of autumn shows an increase of controversies filed with the California State Industrial Accident Commission, located since July first in the State building, San Francisco Civic Center. For August the cases filed were 227, compared with 193 in July.

This increase, however, has not prevented the staff keeping up with their work, for the cases decided in August, numbering 223, practically equaled those filed, and in July the decisions exceeded the filings by seven. These figures compare well with the average filed and decided during the first six months of 1923, numbering 212 per month, and show a decided increase over the average for the year 1922, in which the filings were 191 per month and the decisions 183.

Contractors Build Own Home

The contracting firm of Vukicevich & Bagge, formerly 180 Jessie street, San Francisco, have recently moved to their own building at 815 Bryant street, near Sixth. The new quarters are especially adapted to the needs of the firm and the two-story building contains besides offices, a large drafting room for the estimators and the garage. Storage sheds are provided in the rear for materials and equipment. The company has increased its engineering and construction force with the idea of handling work throughout the state. One of the most recent contracts taken by the firm is the remodeling of the old Pantages Theatre in Oakland. This structure has been purchased by the Louis R. Lurie Co., which will spend $650,000 in redecorating and refurnishing the playhouse.

Atlas Company Show Rooms

The Atlas Heating & Ventilating Company, one of the pioneer heating houses in San Francisco, has recently moved into its new office building, 557-567 Fourth street, where all types of heating equipment is attractively displayed. The exhibit includes large tubular cast iron furnaces for church, threatre and school work, and warm air furnaces adapted to use in residences and small buildings, sectional and circular steam and hot water boilers, oil burning and ventilating equipment and gas furnaces of various types. This exhibit is the only one of its kind on the Pacific Coast and undoubtedly will be of great assistance to architects and contractors as well as others who have heating and ventilating problems.

HOUSE OF MR. JAMES T. NARBITT, RICHMOND
James T. Narbitt, Architect

School Architect Builds Home of Hollow Tile

THE home that the architect builds for himself always proves interesting because it is, perhaps, the only work that he does that is completely his own inspiration. In other words, he cannot fail to be influenced by the prejudices and preferences of the owner; in planning his own home his ideas and ideals of beauty and harmony have full scope.

Mr. James T. Narbett, architect of Richmond, has made the most of his opportunity in his just completed residence in the city of Richmond and the result is that all too rare thing—a home of charm and true artistic distinction.

He chose the Spanish type of architecture, but gave it an interpretation that is peculiarly his own.

The residence consists of a living-room, dining-room, entry hall, maid's-room, den and kitchen on the first floor; stair-hall, bath and two bedrooms on the second floor. It is constructed of 8-inch Dickey Mastertile for the first story, and 6-inch for the second story.

The house is in the center of a 37½-foot by 100-foot lot and is surrounded on all sides by garden and lawn. It has a connecting cloister to the garage, the space between the garage and the residence forming a patio.

The exterior is of stucco in terra cotta tone, the warm, colorful effect being heightened by the rich reds, blues and yellows of the window frames, sash and ornamentations.

Some of the outstanding features of the interior are the Spanish living-room, in which the Spanish motif has been employed on the ceiling and cornice decorations, the Spanish grille on the front door, with opening wicket, and the buffet kitchen with every modern convenience.

Woodwork of the first story is of solid oak with French gray finish. The bathroom and shower are tiled, and fully equipped with built-in fixtures. The bedrooms are in birch, finished in old ivory.

In utilizing Dickey Mastertile for the construction of his home, Mr. Narbett has shown his continued preference for the material which he has employed in the erection of so many schools and other buildings.

The Richmond Union high school, the Stege and Nystrom schools of Richmond, the Roosevelt Junior high school at Richmond, the Brentwood grammar school and the Oakley grammar school are among the schools planned by Mr. Narbett and built of Dickey Mastertile.

Other buildings planned by Mr. Narbett, to be built of Dickey Mastertile, are the Masonic Temple of Richmond and the Nurses' Dormitory of the Alameda county hospital.

NEW BILTMORE HOTEL, LOS ANGELES
Schultz and Weaver, Architects

The New Biltmore Hotel, Los Angeles

The New Biltmore hotel, Los Angeles, designed by Messrs. Schultze & Weaver of New York, has been completed and is said to be one of the best equipped hostelries on the Pacific Coast. The hotel is 14 stories and covers an area of 320 by 200 feet, or very nearly two acres of ground. San Francisco contractors figured prominently in the construction of this building, among them being the following: Gladding, McBean & Co., Forderer Cornice Works, Mac Gruer & Simpson, McGilvray-Raymond Granite Co., Steelform Contracting Co., Waterhouse-Wilcox Pacific Co.

Messrs. Cook & Hall Honored

Quite an extensive exhibit of the works of landscape architects of Southern California was held recently in the Southwest Museum, Los Angeles. One exhibit covered work in City Planning, Sub-Divisions, City Parks and Private Estates.

The jury of award, consisting of Messrs. Sumner P. Hunt, Myron Hunt, A. I. A., James G. Langdon, formerly of the Fine Art Commission of the City of Washington, D. C., and the American Society of Landscape Architects, E. T. Mische, A. S. L. A., of Portland, Ore., and Mr. John R. Prince, City Engineer on Street Openings, voted unanimously that an award of "Distinguished Honor" be given Messrs. Cook & Hall for their splendid work in planning the Los Angeles Administrative Center, described in detail elsewhere in this issue.

In the private estates class, first honor was awarded plans for the Jefferson estate at Montecito by Paul G. Thiene; second honor to Neville R. Stephen's plans for the Charles B. Hopper estate at Beverly Hills, and third honor to Florence Yoch's plans for the Gates estate at Pasadena.

In the parks class, first honor was awarded plans by Cook & Hall for Anaheim Park, and mention was bestowed on plans for the Zoological Garden at Balboa Park, San Diego, by Gardner & Slaymacher. In the subdivision class first honor on the flat plane was awarded Cook & Hall's plans for Carthay Center, and in the steep sloping plane to Franz Herding's plans for Hollywood Knoll.

Special honors were awarded Ralph D. Cornell for a collection of woodland and landscape views in color, and first mention for a collection of photographs to Paul G. Thiene's views of the John L. Severence estate in Pasadena, second mention was given to Charles G. Adams for views of the Glen Orr estate, and third mention to J. O. Stokes for views of the Mrs. Holladay estate in Santa Monica.

Useful New Waterproof Plywood

Lamatco is the name of a waterproof panel from British Columbia, lately introduced into this market:—a three ply panel of cottonwood possessing natural beauty of grain and offered in any variety of finishes for walls and ceilings of home, store or office.

Besides being an ideal interior finish,

this waterproof panel is the handiest material known for all sorts of uses where exposed to the weather. For out door signs, for finishing porches, garages, camps, and for partitions, Lamateo is most suitable. It is quickly and easily installed and at the same time strong and durable.

White Brothers, hardwood lumber dealers of San Francisco, are distributors of Lamateo. Mr. C. H. White, general manager of the concern, has made two fine canoes for use on his summer place, using the thin $\frac{1}{8}$" Lamateo which is pliable and bends easily.

Lamateo is guaranteed not to come apart in the wettest or hottest climate, in fact boiling will not damage it.

Novel Plan for Night Illumination of Office Buildings

ONE of the most recent and novel uses of electricity was introduced in several of the large Eastern cities following the death of President Warren G. Harding. As a tribute to his memory the lights of a number of the tall buildings were burned in certain offices on each floor so as to give the appearance from the street of a huge cross from 100 to 200 feet in height, as shown in the accompanying pictures made by Paul Thompson of New York. Through the co-operation of members of the Association of Building Owners and Managers, fully a score of the most prominent down-town office buildings in

EFFECTIVE FORM OF ADVERTISING BY MEANS OF ILLUMINATED WINDOWS

New York were thus illuminated. The sight is said to have been profoundly impressive for those who were priviledged to view it.

Undoubtedly this experiment will lead to other displays for advertising purposes, as indeed it has already, in the instance of a Milwaukee Bank, which illuminated its windows so as to form the word "Save."

Japan's Building Program

Housing operations as America knows them even in war times, appear insignificant beside the scope of the building operations Japan now faces in reconstructing the great cities of Tokyo and Yokohama, says the Far Eastern Division of the Department of Commerce. The latest reports place the destruction of buildings in the devastated areas at 316,000 in Tokyo, or about 71 per cent of the total number in that city, while in Yokohama out of the 85,000 buildings standing before the disaster only 15,000 are left intact. The destruction in the outlaying districts may bring the total of buildings destroyed up to the half million mark, a large majority of which are homes. This number, added to the housing shortage that existed in Japan before the earthquake, will necessitate the construction of dwelling houses on a large scale. Since Japan normally looks to the United States for about 60 per cent of its lumber requirements it is expected that the demand for American lumber during the reconstruction period will be very heavy.

Japan's preference for American lumber, aside from the price consideration, is due, perhaps, more than anything else to the fact that our lumber is more nearly like that of Japan proper than the product of any other country from which it draws wood supplies. This similarity of wood makes it possible for Japanese builders to substitute American lumber for Japanese in all building projects.

The principal lumber imports of Japan consist of fir, hemlock, pine and cedar, about half of which is imported in large squares of from 12 to 24 inches and a lesser amount in small squares of 4½ by 4½ inches. The large squares are worked up in the local mills and carpenter shops into the different shapes required for general building, while the smaller squares are used as studs for holding up roofs and for supporting beams. The large squares are very popular among builders in Japan and can only be obtained from America.

In comparison with our own homes little wood is required for the construction of Japanese dwellings, in which paper, straw, matting and tile (for roofing) play a large part, but during recent years the tendency has been toward a greater use of wood, especially for ceilings and interiors, as the Japanese are very fond of polished wood in its natural colors. In this respect our lumber has lent itself very admirably owing to its superior quality.

Piling will be required in large numbers for reconstructing the destroyed docks and waterside warehouses and sheds in Yokohama and Tokyo, as well as for building subfoundations for industrial buildings, bridges, and construction work in general.

Day Labor Law Aids Contractors

Officials Must Keep Accurate Account of Costs

By E. EARL GLASS

Executive Secretary, Southern California Associated General Contractors

ENACTMENT of the Breed day labor statute in California is a marker in the history of legislation beneficial to the construction industry. By means of this measure, which takes effect this month, construction of public works by day labor will be placed on such a plane as to preclude possible reflection upon contractors through incomplete or inaccurate cost accountings by municipal or state bodies constructing public works by day labor. Taken in the light of a service to the public generally, it will tend to eliminate waste and reduce costs on work of this type.

The law is very simple, merely requiring public officials properly to keep on file the cost of day labor on public work. This requirement, however, brings the cost of day labor on public construction out into the open where the interested taxpayer readily can see and understand how his money is being spent.

Investigation into the costs of public construction by the day labor method, in many cities, counties and states, has shown it to be unnecessarily wasteful and expensive as compared with the contract method.

The Breed measure was designed to bring that fact forcibly to the attention of the taxpayer and prove that the responsible contractor is better fitted to handle public construction than a public official.

Public officials often assert that work done by the municipality is more certain to be good quality. This assertion, however, is not well founded.

It might appear that municipal officials, having no personal financial interest in the results, would be actuated only by a desire to secure for the city the best quality of work, but experience has proven this untrue.

There often are other motives than the mere saving of money that may, and sometimes do, influence city officials to cut down the cost of public work done under their direct supervision to the lowest figure, which frequently results in detriment to the quality of the work done.

The claim is also sometimes made that by doing the work directly the municipality can provide employment and control of labor to the benefit of the city at large. This is also fallacious for the reason that when work is to be done the necessary labor must be employed either by the city or by the contractor.

For doing the same work the city can use no more labor than the contractor if the labor employed by each is equally efficient and equally well directed. If economical results are to be obtained equal care and discrimination must be exercised in securing labor by the one as well as by the other.

It will now be possible, through enforcement of the Breed law, for the interested taxpayer to compare the total actual cost of work done by day labor by public officials with the bids for which skilled and responsible contractors have offered to do the work.

The general law of California provides that failure of the proper public officer to keep or require the keeping of the cost in accordance with the provisions of the bill, or to file the certificate of costs therein described, is punishable for a misdemeanor. In addition, the public has a civil remedy either by way of mandamus or a petition to remove from office.

The experience of all but a few of the cities and counties, and the State, in doing public work, except routine work, by day labor shows it to be an unnecessarily wasteful and costly method as compared with the contract method. The truth of this statement is admitted by many public officials and engineers, but where it is not admitted it is at the present time difficult, expensive and sometimes impossible to show the facts because of the failure of the public body to keep the day labor costs properly, if at all. This bill merely requires the proper keeping of such costs and it affects only those public bodies who are not keeping their day labor costs properly.

Even when these costs are properly kept, the expense of checking the costs and making them available for comparison is prohibitive. This bill requires the filing of a certificate of such costs, with other data, so that the interested taxpayer may, without great trouble or expense secure the information he desires regarding the cost of doing public work by day labor.

While the Legislature generally favored the regulation of day labor work and the making public of the costs of such work, it was against any measures designed to hamper or obstruct the doing of such work. Many of the legislators strongly favored public work by the contract method; others strongly favored the day labor method because of the

alleged savings made in certain special instances. It was generally conceded, however, that the Breed bill was a public-serving measure and that its enforcement would tend to reduce costs.

The law was prepared jointly by the Southern California Chapter of the Associated General Contractors of America and the Contractors' Association of Northern California. It was through the efforts of these organizations that the measure was introduced into the legislature by Senator Arthur H. Breed. Their laying of constant and proper emphasis upon the importance of its enactment finally resulted in its passage and approval by the Governor.

Architect to Investigate

Mr. Henry H. Meyers, San Francisco architect, has been commissioned by the Alameda County Grand Jury to investigate allegations that inferior materials were used in the construction of Oakland school buildings recently erected. Mr. Meyers, at a recent meeting of the Alameda county Supervisors, was commissioned to prepare architectural details in connection with the Oakland estuary tube for which bonds were recently voted.

The Fire Hazard of Awnings on Office Buildings

(From a Report on Awning Fire Losses by J. S. Kemper & Co.)

A SHORT time ago there appeared in the Los Angeles newspapers an item of news in which the statement was made that practically every office building in that city had adopted the use of Venetian blinds, not only because of their eliminating the fire hazard of awnings but also because of their value as a means of regulating light and ventilation. In this item special reference was made of the Pacific Mutual building, which was reported as having 1500 windows equipped with Venetian blinds.

In reply to an inquiry from Building Management, Mr. Lemuel Freer, manager of the building, supplied the following information:

"The majority of Los Angeles buildings are equipped with Venetian blinds and owners do not allow awnings to be placed outside of their buildings, which is the only safeguard against awning fires.

"The only awning fires that I have seen in Los Angeles are on the ground floor stores, which fires are caused through cigarettes and matches being thrown out of the upper windows. I have always been of the opinion that awnings on the outside of the upper windows of buildings are a great fire menace to the property; besides spoiling the beauty of the building."

J. S. Kemper & Co., who operate the Building Owners' Federation of Mutual Fire Insurance Companies, in a special statement provided by the loss department of the Kemper organization, furnish the following statistics in regard to awning losses:

Awning Fire Losses Paid by the Building Owners' Federation of Mutual Fire Insurance Companies

Date of loss	Total amt. ins. we carry	Total amt. our cos. pay
September 6, 1919	$ 40,000	$ 20.60
September 16, 1919	40,000	4.62
April 25, 1921	175,000	18.11
October 7, 1921	175,000	11.09
October 3, 1922	175,000	179.66
May 14, 1923	200,000	71.60
June 1, 1923	200,000	57.03

Germanstone Flooring in Demand

The Petrium Sanitary Sink Company, factory at Fifth and Paige streets, Berkeley, reports that the demand for their snow white kitchen sink has exceeded all expectations during the last six or eight months and the company has found it necessary to double its working force. Goods are being shipped to all points on the coast.

Another product made by this firm and for which there is an ever-increasing demand is Germanstone, a magnesite composition for kitchen and bathroom floors and showers. The cost of this material runs on an average of 35 cents per foot and it may be produced in any color desired. An example of the lasting qualities of the material is had in the appearance of the floor in the Faculty Club building in the University of California. This floor was laid some fifteen years ago and is in as good condition today as when first put down. The club is having a similar floor placed in its new building now under construction.

Addition to St. Mary's Hospital

Plans are being prepared by Architects Shea and Shea, Chronicle building, San Francisco, for a Class A additional to St. Mary's Hospital at Hayes and Stanyan streets, San Francisco. Cost is estimated at $400,000.

Hospital and Bath House

Bond proposals of $150,000 for a municipal hospital and $50,000 for a municipal bath house will be voted upon in Richmond on November 6th. The hospital plan is backed by the Richmond Hospital Association.

Moves General Offices

The San Francisco sales office of the West Coast Porcelain Manufacturers has been moved from the Oceanic building to 334-5 Wells Fargo building, Second and Mission streets.

DURABILITY

Architects and builders stake their reputations on the walls of the buildings they erect. A builder's reputation can only endure as long as the walls he builds. BUTTONLATH walls are not only more economical, but they are permanent—walls that will outlast the building foundation itself.

Buttonlath Manufacturing Company

Buttonlath

207 Balboa Bldg., San Francisco

KENNEDY

the valves that *last*

Kennedy Valves have been proving their complete dependability for 44 years. You can safely standardize on the big Kennedy line of 600 different sizes and types. Kennedy Valves are simple and easy to operate, remain tight, and have practically no maintenance cost, as is being shown over and over again by installations 35 and even 40 years old, and still fully serviceable in every-day operation.

There is a Kennedy Valve for every requirement on any type of service. In the vast majority of cases a standard Kennedy will be found suitable, but if special design or difference in flange drilling or threading standard is desirable, we will build special at reasonable cost.

180

Send for Catalog

THE KENNEDY VALVE MFG. CO.

Branches and Supply Depots: New York, 95 John St.; San Francisco, 23-25 Minna St.; Boston, 47 India St.; Chicago, 228 N. Jefferson St.
Sales Offices: Philadelphia, Salt Lake City, El Paso

When writing to Advertisers please mention this magazine.

Building Contractors are Nation Builders

THE one distinguishing characteristic that marks the civilized races today, is the comfort enjoyed by its people in their homes. The greater the comforts, the more advanced are the people. For thousands of years, man has concentrated on the creating of real home comforts. Indeed, history itself has developed itself around the building of homes for the people. Civilizations' advancements are marked by these comforts. Examine the home comforts of a people and you have at once an unfailing barometer of its stage of development.

For thousands of years this home comfort has presented a problem and been striven for by builders. Shelter of necessity first compelled this concentration; later, the desire for added comfort asserted itself but it has always been the constructor of homes that provided these features.

Man's home is his history. From his humbleness of existence during the rock ages, when his shelter consisted of a cave in the rocks of a cliff, or, on a rudely constructed platform perched on high branches of a tree, when nature provided in abundance, all those necessaries for sustenance within his immediate grasp, from that time on, men have striven to improve the comforts of home. Then he built his movable home—his tent, which he could move with him during his roaming. Then he built his permanent home of stone surrounded by towers and parapets for defensive purposes—even dug the deep moat or ditch surrounding his home for further defensive measures. He built his home of marble and stone in ancient Rome, Greece and Babylon and his purpose always was for shelter and safety with those added comforts and conveniences his ingenuity of the day contrived.

Comfort of home is a relative term dependent upon the degree of advancement of the people themselves. We have passed from the primitive stage of building homes to those that combine beauty, comfort, harmony and health serving sanitary appliances. What the future has in store, depends entirely upon the designers, producers and finally, the building contractors themselves. But, whatever that holds for us, whatever our future generations will enjoy, depends upon the influence that Home Life will have upon the people and in that regard is evidenced the true importance of the building contractor towards the building up of his nation and his country.

The builders' profession is a wonderful one. Its importance among all other professions is constantly impressed upon us. Relatively it ranks probably equal with that of the agricultural which is generally recognized as of first importance. In point of money invested or money diverted toward building of homes, the builders' art stands supreme. Twenty-five per cent of all money earned is diverted either directly or indirectly toward the building industry. As an employer of men, the building industry ranks first. In salary or wage paid to these workers, their earnings are so far advanced compared to other lines of vocations as to make a serious comparison ridiculous. The building contractors' domain is coextensive with the civilized world and his operations constantly take him even beyond.—The Decorating and Painting Contractor.

Laying Oak Flooring

The laying of oak flooring is not difficult. Any first-class carpenter can make a good job, some judgment and care are necessary in order to produce the best results.

A sub-floor should be used under the 13/16, ⅜ and ½-inch thicknesses.

The sub-floor in new houses should be reasonably dry and laid diagonally. Shiplap of 6-inch or 8-inch width is preferred. This should not be put down too tight and should be thoroughly dried and cleaned before the oak flooring is laid.

It is well to use dampproof paper between the oak flooring and the sub-floor. Do not use ordinary building paper or rosin sized paper. The quantity required is small, and the very best quality of dampproof stock should be used. Where sound proof results are desired a heavy deadening felt is recommended.

It is very important to leave about ½ inch space on all sides between the oak floors and the base board to allow for expansion in event any dampness later gets into the oak flooring. This opening is covered by the quarter-round or base moulding.

Oak flooring should be laid at right angles to the sub-floor in old houses. After laying and nailing three or four pieces, use a short piece of hardwood 2 by 4 placed against the tongue and drive it up. Care should be taken in driving up ⅜-inch flooring not to break the tongue, which is fragile. Also do not drive up excessively tight. The nailing of oak flooring is very important. All tongued and grooved oak flooring should be blind nailed. For 13/16-inch use 8 penny cement coated flooring brads. For ⅜-inch use 3 penny cement coated finishing nails.

STANDARD SPECIFICATION

for

TERRA COTTA

First Edition
September 1923

The Standard Specification for the manufacture, furnishing and setting of Terra Cotta has been completed and is now ready for distribution.

This Specification is the result of exhaustive co-operative study and embodies the highest standard of quality, the best features of modern shop practice and the most thoroughly tested methods of incorporating Terra Cotta in sound masonry construction.

The Standard Specification enables the Archi tect to specify in detail every factor that makes for entirely satisfactory Terra Cotta.

Copies will be sent on request to Architects, Engineers and Building Contractors.

NATIONAL TERRA COTTA SOCIETY
19 West 44th Street, New York City

TERRA COTTA

Permanent *Beautiful* *Profitable*

Architecture Set to Jazz!

In the building world there may well be great interest in the publication by the Chicago Tribune of the results of that high adventure in architectural competition which was apparently imbued as Louis H. Sullivan so wonderfully phrased it in the pages of the Architectural Record: "—with that high romance which is the essence, the vital impulse, that inheres in all the great works of man in all places and all times, that vibrates in his loftiest thoughts, his heroic deeds, his otherwise inexplicable sacrifices, and which forms the halo of his greatest compassions, and of the tragedy within the depths of his sorrows."

Mr. Sullivan has been outspoken in his verdict that the competition failed in living up to the high purpose which it announced as its primary aim. His fluent defense of that aim, as exemplified in the work of one of the defeated competitors, has become an event in the construction world of almost as great import as the competition itself. All this is history, only called again to mind by the recent publication of the complete group of sketches submitted in this remarkable contest.

Studying this synthesis of world-wide architectural conceptions interpretive of American life, brings a thrill not felt in looking over the original sketches. The quick turn of the pages allows no time for the mental digestion of the previous impression. The flowing panorama of concepts rapidly drives home other emotions besides those of upward struggle and achievement which dominated the exhibit.

One glimpses broad ramparts of suave dignity and conservatism supporting leaning columns, engaged in hasty retreat from the eye, which finally are surmounted by the rakish headpiece of the charlatan. There are gloomy moments of dogma, glorified village meeting houses, super-embellished wedding cakes and square walls which gloomily repress the mind as would bars of prison. There are monuments which morbidly suggest the tombs of the Pharaohs, tall mushrooms with yet undeveloped caps, heady towers ornamented with attached designs reminiscent of the illicit moonshiners' still. There are detached idealisms unrelated to life, ruthless creatures devoid of spiritual feeling and strange jumbles which are but the spirit of the pushcart market set in stone.

Last of all the cancatenations of the jazzaramba are present in all the glory of their tintinabulating syncopation.

Truly, in publishing the complete and unexpurgated series of architectural interpretations, the Chicago Tribune has contributed a commentary on American life which in itself is a contribution of such value as may not be properly estimated at its full worth until posterity weighs it in the scales.—American Contractor.

Los Angeles Architectural Club

The Architectural Club of Los Angeles held its annual meeting at the Athletic Club, October 2nd. Its membership increased during the year from 200 to nearly 400.

Election of officers for the ensuing year resulted in the choice of Jess Stanton for president; Sumner Spaulding for vice-president; Clifford A. Truesdell, Jr., for junior director; J. C. Simms for secretary, and Paul Penland for treasurer.

Architect Edwin Bergstrom was the principal speaker, his subject being "Office Management." Architect George Van Pelt gave an illustrated lecture on "Mexican Architecture."

Removal Notices

Architect Arthur W. Angel has moved his office from 2136 E. First street to Room 3, 3404½ Whittier boulevard, Los Angeles.

Architect Mott M. Marston has moved his office from 1400 Stock Exchange building to suite 507 Douglas building, Los Angeles.

Architect James J. Donnellan has moved his office from 214 Lissner building to suite 231 Bryson building, Los Angeles.

Architect William H. Kraemer, formerly located at 325 N. Western Ave., has removed his office and drafting rooms to suite 105 Wright building, Los Angeles.

Los Angeles Hotel

Architect Leonard L. Jones, Grosse building, Los Angeles, has completed plans for a twelve-story Class A hotel to be erected at Bixel and Ingraham streets, Los Angeles, for Mrs. H. Foote and J. Foote. The estimated cost is $800,000.

PETERS CONSTRUCTION CO.
GENERAL CONTRACTORS
705 Atlas Building
604 MISSION ST., SAN FRANCISCO
Phone Douglas 9063
Builders' Exchange
351-12th ST., OAKLAND
Phone Lakeside 6750

THE Tabernacle Presbyterian Church, Indianapolis, Indiana.

The exterior walls are of Indiana Limestone, laid up in mortar of Medusa Non-Staining White Cement. The interior precast trim is "Artstone," done by The George Rackle & Sons Company, Cleveland, also using Medusa White Cement.

Mr. J. W. C. Corbusier, Cleveland, Architect. E. A. Wehr, Pittsburg, General Contractor.

THE SANDUSKY CEMENT CO.
Department P Cleveland, Ohio
New York: 350 Madison Ave.
Dixon, Ill.: 34 Dixon National Bank Bldg.

Medusa Stainless White Cement—plain and waterproofed—and Medusa Waterproofing are carried in stock and sold by leading building-supply dealers in California, Oregon and Washington.

Architects are respectfully referred to our Catalogs in "Sweet's," pages 94-95 and 316-318: and are cordially invited to consult with our Engineers at Cleveland, relative to any special problems involving the use of either Non-Staining White Cement, or Integral Waterproofing.

"Waterproofed White means Medusa!"

MEDUSA
WATERPROOFING.

"Just a Minute, Please"

HOW often have you been interrupted in an important discussion or the dictating of a letter by the ring of your telephone, only to find on answering it the voice of the operator asking—"Mr. Jones?" Your affirmative reply is followed by—"Just a minute, please."

At the other end of the line Mr. Smith also engaged in an important discussion or in the dictating of a letter, previous to which he has someone to "get Mr. Jones on the phone."

But when Smith's bell rings he often finishes his letter, or the argument he has started, before answering the phone, thus taking the time of Jones, who is waiting at his end of the line for "just a minute, please."

This procedure happens many times a day to nearly every busy man, and it seems fair to ask "Why?" Does Smith consider his time more valuable than Jones'? And if so, how can he judge? Or doesn't Smith know that one of the first attributes of a gentleman is to deal fairly and courteously with his fellows? Sometimes it is merely thoughtlessness or selfishness on Smith's part, but no doubt he also has similar experiences, and the annoyance thus caused should tend to remind him "not to do unto others as he would not have them do unto him."

Most incoming telephone calls in business at least, are made in seeking some sort of favor—a bit of information, perhaps, or even the sale of a product—and the wise man will not antagonize the one from whom he hopes to get something.

If a personal talk over the telephone is necessary, or desirable, it should be made by the person seeking the interview, or through a substitute, but never should the "party of the second part" be expected to await the caller's convenience; on the contrary, if at all.

Surely Smith dictates the letters he signs. Why not then make his own telephone calls, or at least instruct his substitute to give him the phone as soon as Jones' number is called, so that the latter will not be kept waiting unnecessarily?

Smith's excuse of being "too busy" is hardly justified when one realizes that the average telephone call requires only a small fraction of a minute to complete.

It is often found that the "Smiths" who follow the "just a minute" practice are not as important in the business world as the "Joneses" who are willing to admit that a call worth making is worth the small time required.

The "just a minute" nuisance should be stopped, and the only way to stop it is to **stop it.**—Valve World.

Peerless Ironing Board-Table
No. 3-14

1 of 29

PEERLESS
BUILT-IN FURNITURE

conveniences. All standardized. Installed singly or in assemblies. Send for catalog of these new devices. All unusual.

SOLD BY

The HOOSIER STORE

Pacific Building, San Francisco

Los Angeles, Oakland, Portland, Seattle, Fresno, Stockton, San Jose, Long Beach, San Diego, Glendale.

Paraffine Companies, Inc., Continues to Expand

So rapid has been the growth of the Paraffine Companies, Inc., manufacturers of the famous Pabco products, that the concern's general offices in San Francisco have been moved to new quarters at 475 Brannan street, in the building formerly occupied by Baker & Hamilton. The structure has been completely altered to meet the growing need of its new occupant. Increased storage and plant facilities to meet rapidly increasing business requirements, together with the benefits to be derived from gathering scattered activities together under one roof and under one management, are the reasons for making the change.

One of the finest warehouses in the bay cities is contained in the basement of the building. All the general offices of the company, which have been located at 34 First street, have been moved to the new building where, with a view to convenience, they are on one floor, with the exception of the Purchasing and Personnel Departments, which are on the other floors. The new structure affords in excess of 212,000 square feet, of which 18,000 feet are used for office space alone.

The converting plant now located in San Francisco on Second street, where the company manufactures and prints cartons, will be moved into the new building, together with the fiber container plant, now located in Melrose. Both plants are to be consolidated and operated under the same management, thus affecting not only material economies through the elimination of plant and management duplication, but also adding convenience and efficiency in management.

An electrotyping plant will be installed in the new quarters, enabling the company to provide for its own electrotyping in the printing of boxes and cartons.

Materials now warehoused at various points in San Francisco and in Oakland will be housed in the basement of the new building.

From the standpoint of location and shipping facilities, the new home of the Paraffine Companies, Inc. is little short of ideal. In the heart of the industrial and shipping center of San Francisco, with spur trackage running the full length of the southern end of the building, fully adequate for all shipping requirements, and with a spacious driveway running the full length of the eastern side of the building, affording ample accommodations for its local trucking needs, the new plant rivals the freight terminal facilities afforded by railroad companies in many communities.

For Distinctive Hardwood Woodwork

-KOA-
HAWAIIAN MAHOGANY

A High Grade Hardwood, Medium Priced

Koa takes an elegant finish and is unusually highly figured.

When finished natural Koa shows exquisite high lights and shadows, or it can be stained as Mahogany often is. Koa comes in the same fine widths and high grade as Mahogany.

More Distinctive Than Gum

Koa can be finished in neutral tones like gum. It has, however, a more distinctive and aristocratic appearance than gum, and it is a far more durable wood. Koa improves with age.

Koa gives an aristocratic effect at a medium price.
Koa will express your individuality.

We have on hand a large stock of fine dry Koa, ready for immediate use.

WhiteBrothers

Hardwood Headquarters

NORTHERN CALIFORNIA DISTRIBUTORS

5th and Brannan Sts San Francisco

Prepared Roofing Simplified

At a recent meeting at the Department of Commerce, Washington, with representatives of the Division of Simplified Practice and the Chamber of Commerce of the United States, manufacturers, distributors and consumers of prepared roofing agreed to the following simplifications as being of benefit not only to the industry but also to the public at large:

1. To eliminate all grades or kinds of slate-surfaced and also stone-surfaced prepared roofing that do not measure up to the requirements of the "Class C Label" of the Underwriters Laboratories.

2. To reduce the varieties of smooth surface roofing to seven lines or grades —weights and qualities being considered.

This Simplified Practice Recommendation is to become effective January 1, 1924, and is to hold for one year.

According to Wm. A. Durgin, Chief of the Commerce Department's Division of Simplified Practice, this is another step in the general program fostered by Secretary Hoover for the elimination of waste in industry. "The proposed eliminations," he said "were strongly supported by the American Institute of Architects, the National Retail Hardware Association representing 21,000 retail hardware dealers throughout the United States, the National Retail Lumber Dealers Association, the Southeastern Builders' Supply Association, and the Prepared Roofing Association."

Prepared roofing is a product used all over the world, not only as a roofing material, but in cane fields and elsewhere for keeping weeds down and retaining moisture and warmth.

It is believed this program will bring many economies to the manufacturers, such as decreased idle stocks, less idle investment, and ultimately lower production costs, and benefit the distributors by stimulating turnover and increasing sales. Consumers will also benefit in due time through better quality, better prices, and quicker service. Several other simplifications of building materials have been completed, notably common and face clay brick. Others in process of completion are lumber, hollow building tile, cement brick, block and tile, clay drain tile, etc. All of these simplifications are contributing to the general effort to reduce the needless wastes in the building field, and thus forward the achievement of the ideal now so prominently before the public—"Better Homes at Lower Cost."

Architect William H. Crim, Jr., of San Francisco, accompanied by Mr. A. C. Woef, San Francisco realtor, is enjoying a five months trip abroad.

Apartment House at 655 Powell Street, San Francisco, for Oser Estate.

Hauser Casement Windows

Specified and used—Hyman and Appleton, Architects; Hays-Oser Company, Builders.

DURABLE, EFFICIENT
ECONOMICAL

HAUSER WINDOW CO.
Factory, Office and Show Rooms:
1362 Harrison St., San Francisco
Phone Hemlock 1062

H. RUMPF
CONTRACTING DECORATOR
CUSTOM BUILT FURNITURE
DRAPERIES AND FURNISHINGS

School and Theater Equipment
Drop Curtains, Draperies

Specializing in Furnishings for Hotels, Lodges, Clubs, Steamships, Apartment Houses.

Estimates Furnished

567 HOWARD STREET, SAN FRANCISCO, CALIF.

New Berkeley Zoning Law

The Berkeley City Council has approved a plan governing the zoning and rebuilding of the burned area.

The plan was suggested by Dr. Carol Aronovici, city planning consultant. It provides for an apartment house zone including 48½ per cent of the burned area, a two-family residence zone including 14 per cent and a one-family zone including 37½ per cent.

The apartment house zone is to cover the south and west sides, along the University of California campus on the south and Shattuck avenue on the west. It is designed especially to care for the student population.

Piedmont Bank Building

Architect Edward T. Foulkes of San Francisco, has completed plans and has awarded a contract to R. W. Littlefield of Oakland, for the construction of a five-story reinforced concrete branch bank building at Piedmont for the American Bank.

Certified Architects

At the meeting of the State Board of Architecture (Northern District) held on September 25th, the following were granted licenses to practice architecture in this state:

Mr. Gustave Aaron—209 Crocker building, San Francisco.

Mr. Alfred H. Jaehne—454 California street, San Francisco.

Oakland Store and Loft Building

Plans have been completed and a contract has been awarded for a two-story concrete store and loft building on 14th street, near Webster, Oakland, for Mr. Robert F. Fitzgerald. The building is to cost approximately $15,000. Mr. C. W. McCall is the architect.

STANLEY
GARAGE
HARDWARE

14 Reasons for your Specification of "The BEST Glass"

THE answer of the architect to the ever-increasing demand for more light in the home, school and office building is a provision for more windows and better window glass. Here are fourteen reasons why our window glass is not only better glass, but "The Best Glass."

1. Our melting furnaces are the largest in the world and produce uniformly melted batch.
2. Our improved mechanical process of drawing and blowing gives our glass greater tensile strength and higher modulus of rupture than any other window glass, plate glass, or rolled glass.
3. Our latest improvements in our blowing machines enable us to produce absolutely perfect cylinders, which makes it possible to secure the best flattening ever obtained.
4. Our new method of flattening gives our glass a wonderfully even surface, preserving meanwhile the brilliant lustre of the drawing process.
5. Our glass has less wave than other glass, and consequently shows less distortion.
6. Our glass is uniformly flat; it contains no reverse curves.
7. Our glass is uniform in thickness.
8. Our glass is perfectly annealed and therefore does not break as easily as poorly annealed glass.
9. Our glass is washed and thoroughly cleaned in an acid bath, which prevents discoloration and permits ready detection of defects.
10. Our glass cuts perfectly on both sides.
11. Our glass is graded to the highest standard of quality.
12. Our grading is the recognized standard for the United States, and is higher than the foreign standards.
13. Our glass does not break in shipment, on account of the uniformity of flatness, well-made boxes, great care in packing, and skillful loading.
14. Our entire process is conducted on scientific principles.

Our elliptical trade-mark together with the grade markings stenciled on every box of the genuine guarantee the quality. Specify "The Best Glass" and be assured of strength, evenness and beauty.

AMERICAN WINDOW GLASS CO
GENERAL OFFICES PITTSBURGH, PA. The BEST BRANCHES IN PRINCIPAL CITIES

Yards:
Tracy - Brentwood
Patterson - Newman
California

Phones:
Kearny 2073 - 2074

SANTA FE LUMBER CO.
A. J. RUSSELL, Mgr.

Wholesale and Retail
LUMBER

POLES AND PILING
OIL RIG AND SHIP TIMBERS
SAGINAW SPECIAL SHINGLES

FENCE POSTS
SIMPLEX SILOS
PAPEC ENSILAGE CUTTERS

16 California Street
San Francisco, Calif.

from tree to consumer
Pine and Redwood Lumber
SASH DOORS AND MILL WORK
SUNSET LUMBER COMPANY
MANUFACTURERS — WHOLESALE AND RETAIL
Main Office and Yards:
FIRST AND OAK STREETS, OAKLAND
Phone Oakland 1820

POPE & TALBOT
Manufacturers, Exporters and Dealers in
Lumber, Timber, Piles, Spars, Etc.
Office, Yards and Planing Mills
859-869 THIRD STREET, SAN FRANCISCO, CAL.
Mills: Port Gamble, Port Ludlow and Utsalady, Washington

Furnaces
AGENTS FOR
FRONT RANK All Steel Warm Air Furnaces
AND THE OLD RELIABLE
THATCHER Cast Iron Warm Air Furnaces
REGISTERS — FURNACE FITTINGS — REPAIRS
Montague Range and Furnace Company
327-329 JESSIE STREET Phone Garfield 1422 826-830 MISSION STREET
SAN FRANCISCO, CALIF.

When writing to Advertisers please mention this magazine.

Detail of Residence, Oyster Bay, L. I. Carrère & Hastings, Architects

THE country house offers an unlimited field for artistic brickwork. In the detail above, the treatment of the frieze beneath the eaves almost suggests a delicate mosaic, well within the possibilities of the material and thoroughly accordant with the solid base of brickwork. In "Architectural Details in Brickwork" you will find many examples of artistic brickwork in which only standard brick are used. The halftone plates, issued in three series, each in an enclosed folder ready for filing, will be sent to any architect requesting them on his office stationery. Address, American Face Brick Association, 1759 Peoples Life Building, Chicago, Illinois.

IRON AND STEEL PRODUCTS

WAREHOUSE AND MILL SHIPMENTS

STEEL BARS
for
CONCRETE REINFORCING
FURNISHED *and* INSTALLED

EDW. L. SOULE CO.
SAN FRANCISCO

SUTTER 2821

IRON AND STEEL EDW. L. SOULE CO. SAN FRANCISCO

RIALTO BUILDING

What Does It Mean to You

—when a manufacturer trade marks his product?

It means this—

He is maintaining **QUALITY** standards—standing squarely behind his products—protecting you and himself from inferior merchandise.

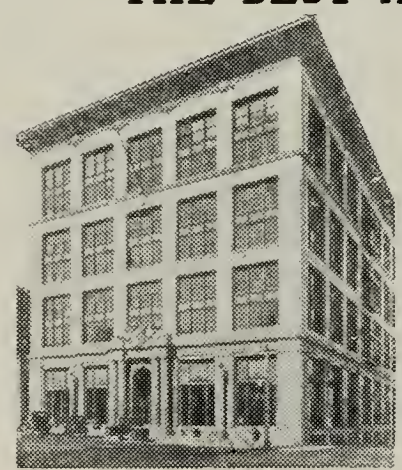
When specifying hardwood, say

"BATAAN" MAHOGANY

Lumber, Veneers, Plywood Panel
Hardwood Flooring

CADWALLADER-GIBSON COMPANY
5th and Brannan Streets
San Francisco, Calif.
Phones Douglas 1737-8

THE BEST ARGUMENT FOR ANY BUILDING



A fine building that hasn't the right kind of a heating boiler is like the giant of a man who puts up a healthy front and has a weak heart. Such a building, with all its frills, is'nt worth much to the occupants, hence it *can't* be worth much to the owner.

THE DON LEE BLDG.,
San Francisco, is equipped with
KEWANEE BOILER
AND KEWANEE GARBAGE BURNER
both burning oil with high efficiency

LOW PRESSURE HEATING BOILERS — HIGH PRESSURE POWER BOILERS

KEWANEE BOILER COMPANY

San Francisco: 216 Pine Street — Los Angeles: 420 East 3rd Street

Present Cost of Building Materials

THESE quotations are based on reliable information furnished by the San Francisco material houses. Date of quotations, October 20, 1923.
All prices f. o. b. cars San Francisco or Oakland For country work add freight and cartage to prices given.

Bond—1½% amount of contract.

Brickwork—
Common, $36.00 per 1000 laid.
Face, $80.00 per 1000 laid.
Enamel, $150.00 per 1000 laid.
Common, f. o. b. cars, $15.50, plus cartage.
Face, f. o. b. cars, $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (Delivered to building in carload lots.)

12x12x3 in.	$102.00 per M
12x12x4 in.	115.00 per M
12x12x6 in.	160.00 per M
12x12x8 in.	165.00 per M

Hod carriers, $6.50 per day.
Bricklayers, $10.00 per day.
Lime—$2.25 per bbl.; carload, $2.15

Composition Floors—24c to 50c per sq. ft. In large quantities, 24c per sq. ft.

Composition Stucco—$1.90 to $2.10 per sq. yard (applied).

Concrete Work (material at San Francisco bunkers)—

No. 3 rock	$2.15 per yd.
No. 4 rock	2.30 per yd.
Niles pea gravel	3.50 per yd.
Niles gravel	2.35 per yd.
Niles top gravel	2.75 per yd.
City gravel	2.15 per yd.
River sand	1.75 per yd.
Delivered bank sand	1.00 per yd.

SAND

Del Monte	$1.25 to $1.50 per ton
Fan Shell Beach (Car lots, f. o. b. Lake Majella)	$2.50 to $3.00 per ton
Swedish cement	$2.68 per bbl.
Belgian cement	2.65 per bbl.
Cement (f. o. b. cars)	3.01 per bbl.

Rebate for sacks, 10c each.

Atlas "White"	$ 9.75 per bbl.
Medusa "White"	$ 9.95 per bbl.
Forms, Labors	$30.00 per M

Wage—

Concrete workers	$5.00 per day
Cement fmishers	8.50 per day
Laborers	5.00 per day

Dampproofing—
Two-coat work, 25c per yard.
Membrane waterproofing—4 layers of P. B. saturated felt, $5.25 per square.
Hot coating work, $2.00 per square.
Wage—Roofers, $8.00 per day.

Electric Wiring—$6.00 to $10.00 per outlet for conduit work (including switches).
Knob and tube average $3.00 to $5.50 per outlet.
Wage—Electricians, $8.00 per day.

Elevators—
Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in 4-story bldg., $3250; direct automatic, about $3000.

Excavation—
$1.25 per yard, if sand. Teams, $10.00 per day. Trucks, $21 to $30 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—
Ten-foot balcony, with stairs, $105.00 per balcony.

Glass—(Consult with manufacturers.)
21 ounce, 16c per square foot.
Plate, $1.10 per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. ft.
Obscure glass, 28c per square foot.
Note—Add extra for setting.
Wage—Glaziers, $8.00 per day.

Heating—
Average, $2.25 per sq. ft. of radiation, according to conditions.
Wage—Steamfitters, $9.00 per day.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.
Wage—Iron workers, bridge and structural, $9.00 per day.
Architectural iron workers, $7.00 per day.

Lumber—(Prices delivered to bldg. site)
Common, $40 per M (average).
Com'n O.P. (select, avrg.....$42.00 per M

Flooring—

1 x 6 No. 3—Form lumber	$26.00 per M
1 x 4 No. 1 flooring	72.00 per M
1 x 4 No. 2 flooring	65.00 per M
1 x 4 No. 3 flooring	50.00 per M
1 x 6 No. 2 and better flooring	65.00 per M
1¼ x 4 and 6 No. 2 flooring	68.00 per M

Slash grain—

1 x 4 No. 2 flooring	60.00 per M
1 x 4 No. 3 flooring	53.00 per M

No. 1 common run to

T. & G.	$40.00 per 1000
Lath	6.50 per 1000

Shingles—(Add cartage to prices quoted)

Redwood, No. 1	$1.10 per bdle.
Redwood, No. 2	.90 per bdle.
Red Cedar	1.25 per bdle.

Building Paper—

1 ply per 1000 ft. roll	$6.25
2 ply per 1000 ft. roll	9.60
3 ply per 1000 ft. roll	14.55
Sash cord com. No. 7	1.25 per 100 ft.
Sash cord com. No. 8	1.40 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.30 per 100 ft.
Sash weights cast iron	60.00 Ton

Nails, $4.25 base.

Hardwood Flooring—

	⅝x2¼" T&G	¾x2" T&G	⅝x2" Sq. Ed
⅝x3¼" T & G Maple			$137 M ft.
1⅛x2¼" T & G Maple			140 M ft.
¾x3½" Sq. Edge Maple			116 M ft.
Clr. Qtd. Oak	$179 M	$124.00 M	$156 M
Sel. Qtd. Oak	135 M	92.50 M	114 M
Clr. Pla. Oak	140 M	92.50 M	114 M
Sel. Pln. Oak	124 M	80.00 M	97 M
Clear Maple	135 M	81.00 M	
Orion	140 M	100.00 M	100 M
Bugac	130 M	90.00 M	90 M
Laying and Finishing	16c ft.	16c ft.	13c ft.

Wage—Floor layers $9.35 per day.

Millwork—
O. P., $100 and up per 1000. R. W., $120 and up per 1000.
Double hung box window frames, average) with trim, $8.00 and up, each.
Doors, including trim (single panel), $10.50 and up, each.
Doors, including trim (five panel), $8.50 each.
Screen doors, $3.50 each.
Cases for kitchen pantries seven feet high, per lineal foot, $7.50 each.
Dining room cases, $8.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average) $16 per m.
For smaller work, average, $28.00 to $35.00 per 1000.
Wage—Carpenters, $8.00 per day.
Laborers—$5.00 per day.

Marble—(Not set), add 40c to 60c per ft. for setting.

Columbia	$1.60 sq. ft.
Alaska	1.60 sq. ft.
San Saba	3.15 sq. ft.
Tennessee	2.00 sq. ft.
Verde Antique	3.75 sq. ft.
Westfield Green	3.50 sq. ft.

Wages—Marble setters, $8.00 per day; helpers, $5.50 per day. Marble polishers and finishers, $6.00 per day.

Painting—

Two-coat work	30c per yard
Three-coat work	45c per yard
Whitewashing	5c per yard
Cold water painting	9c per yard

Turpentine, $1.20 per gal. in cases and $1.05 per gal. in tanks.
Raw Linseed oil....$1.05 per gal. in bbls.
Boiled Linseed Oil.. 1.10 per gal. in bbls.
Pioneer white and red lead, 11¾c lb. in one-ton purchases; 12c lb. for less than 500 lbs.
Wage—Painters, $8.00 per day.
Note — Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.50 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Pipe Casings—14" (average), $7.50 each.

Plastering—(Including Lathing)
Interior, on wood lath, 65c per yard.
Interior, on metal lath, $1.25 per yard.
Exterior, on brick or concrete, $1.30 per yard.
Portland White, $1.75.
Interior on brick or terra cotta, 60c to 70c per yard.
Exterior, on metal lath, $1.85 to $2.25 per yard.
Wood lath, $7.00 a yard per 1000.
Metal studding, $1.25 to $1.50 per yard.
Suspended ceiling and walls (metal furring, lathing and plastering), $2.00 per yard.
Galv. metal lath, 33c and up per yard, according to gauge and weight.
Lime, f. o. b. S. F. warehouse, $2.50 bbl.
Lime, bulk, per ton of 2000 lbs., $19.50
Hardwall plaster, $15.40 per ton, f. o. b. warehouse. (Rebate on sacks, 15c.)
Finishing plaster (carload lots), $19.00.
Hydrate of lime, $19.50 per ton, f. o. b. warehouse.
Wage—Plasterers, $10.00 per day.
Lathers, $8.00 per day.
Hod carriers, $7.00 per day.

Plumbing—
From $70.00 per fixture up, according to grade, quantity and runs.
Wage—Plumbers, $9.00 per day.

Reinforcing Steel—
Base price for car load lots, $3.80 per 100 lbs., f. o. b. cars on docks.
Average cost to install, $25 per ton.
Wage—Housesmiths, $8.00 per day.

Roofing—
Five-ply tar and gravel, $6.25 per square for 30 squares or over.
Less than 30 squares, $6.50 per square.
Tile, $35.00 to $50.00 per square.
Redwood Shingles, $12.00 per square in place.
Cedar Shingles, $12.00 per sq. in place.
Reinf'd Pabco, 7 yr. roof, $7.50 per sq.
Reinf'd Pabco, 10 yr. roof, $10.25 per sq.
Reinf'd Pabco, 20 yr. roof, $13.50 per sq.
Recoat, with Gravel, $3.00 per square.
Wage—Roofers, $8.00 per day.

Sheet Metal—
Windows—Metal, $2.00 a square foot.
Fire doors, (average), including hardware, $2.30 per sq. ft.

Skylights—
Copper,$1.25 a square foot (not glazed)
Galvanized iron, 35c a square foot (not glazed).
Wage—Sheet metal workers, $8.50 per day.

Stone—
Granite, average $8.00 sq. ft. in place.
Sandstone, average $5.50 sq.ft. in place.
Indiana Limestone, $4.25 per sq. ft. in place.
Wage—Stone cutters, $8.00 per day.
Stone setters, $8.50 per day.

Store Fronts—
Copper sash bars for store fronts, corner, center and around sides, will average 85c per lin. ft.
Note—Consult with agents.

Structural Steel—$117 per ton (erected).
This quotation is an average for comparatively small quantities.
Light truss work higher; plain beam and column work in large quantities, less.
Cost of steel for average building (erected), $115 per ton.

Steel Sash—
All makes, from S. F. stock, 26c to 34c per sq. ft.
All makes, plant shipment, 28c to 34c per sq. ft.
(Includes mullions and hardware.)

Tile—White glazed, 80c per foot.
White floor, 80c per foot.
Colored floor tile, $1.00 per foot.
Promenade tile, $1.00 per sq. ft. laid.
Wage—Tilesetters, $8.50 per day.

SERVICE

TESTING
INSPECTION
CONSULTATION
PRODUCTION

Structural and Engineering Materials

ROBERT W. HUNT CO.

ENGINEERS

Chemical and Physical Testing Laboratories

New York Chicago Pittsburgh
St. Louis San Francisco Mexico City
London Montreal

RETARDO

protects against fire

It insures your client of reasonable protection against fire, both interior and exterior.

RETARDO preserves the surface, beautifies, and is manufactured in all colors and for all purposes.

RETARDO costs no more than ordinary paint, but does more work.

Send for color chart and further information

Fire Retardent Products Co.
2838 Hannah Street Oakland, Calif.

FIRE PREVENTATIVE PAINT

IMPERIAL
WATERPROOFING

Will Keep Out Moisture and Dampness

Trade **WATERX** Mark

If your building is leaking through the walls or around the windows, or if the Basement walls are wet below ground — call up SUTTER 978.

IMPERIAL WATERPROOFING is manufactured by BROOKS & DOERR, 460 7th St., San Francisco

1002-04 Merchants National Bank Building
Phone Sutter 978
SAN FRANCISCO, CAL.

CORROSIRON

MADE IN U.S.A.

the acid-proof drain pipe

Make your acid drain lines permanent -:- -:-

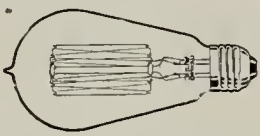
Corrosiron drain pipe and fittings manufactured and carried in stock in San Francisco

PACIFIC FOUNDRY COMPANY

Harrison and Eighteenth Streets
SAN FRANCISCO

ROBERTS MFG. CO.

Lighting Fixtures
Electric Appliances
Incandescent Lamps



WILLYS FARM LIGHTING AND POWER PLANTS

663 Mission Street San Francisco

PERMALIGHT

FLAT MILL WHITE

A Snow White Paint in Oil, giving equal opacity of cold water paints. Can be applied with spraying machines at a small increase of cost over water paints for use in factories, warehouses, loft buildings, laundries.

Hill, Hubbell & Co.

TECHNICAL PAINTS

SAN FRANCISCO

Los Angeles Portland Seattle New York

MT. SINAI HOSPITAL, NEW YORK
Arnold W. Brunner, Architect

MT. SINAI HOSPITAL
NEW YORK

equipped with

FRINK REFLECTORS

including

OPERATING TABLE REFLECTORS
NIGHT LIGHTS
POLARALITE SIGNS

Our Engineering Department is co-operating with the leading architects in laying out and designing the lighting of prominent buildings throughout the country. We hope we can be of service to you.

"Specify Frink Reflectors"

I.P. FRINK, Inc.

SAN FRANCISCO, CAL.,
77 O'Farrell Street
24th Street and 10th Avenue,
New York

Chicago, Ill.
Monadnock Bldg.
Boston, Mass.
161 Summer St.
Detroit, Mich.
325 State St.
Cleveland, Ohio
992 The Arcade
Buffalo, N. Y.
310 Mutual Life Bldg.
St. Louis, Mo.
1415 Pine Street
Seattle, Wash.
609 Seaboard Bldg.
Philadelphia, Pa.
Franklin Trust Bldg.
Cincinnati, Ohio
601 Second Nat'l. Bank Bldg.
Louisville, Ky.
415 West Main St.
Birmingham, Ala.
426 Jefferson Co. Bank Bldg.
Atlanta, Ga.
1526 Candler Bldg.

Canada
Associated with Robert Mitchell Co. Ltd.
64 Belair Avenue, Montreal

BEN-OX

Easy-to-Wire Interchangeable *Industrial Lighting* Equipment

Cast Basic Ceiling Unit equipped with Ben-ox Thread. Fastens to standard outlet box.

Keyless Socket for Conduit Connection. Equipped with Ben-ox Thread.

Wiring is looped through or ended under large terminal binding screws.

Does away with soldered and taped joints.

Reduces installation time to a minimum.

Completes wiring—inspection may be secured, lamp screwed in and temporary light obtained. Reflectors or other fixture parts, equipped with Ben-ox thread, may be attached without disturbing the original wiring.

Reflectors—Angle, Bowl and RLM Dome, equipped with Ben-ox Thread.

Easy to Clean

By means of the Ben-ox thread, it is the work of a minute to remove reflector for cleaning.

Whenever and wherever industrial lighting is being considered it will pay to tie up with the Ben-ox thread.

Where local control is desired the Pull Chain Element is simply screwed in between Ceiling Outlet or Socket and Reflector.

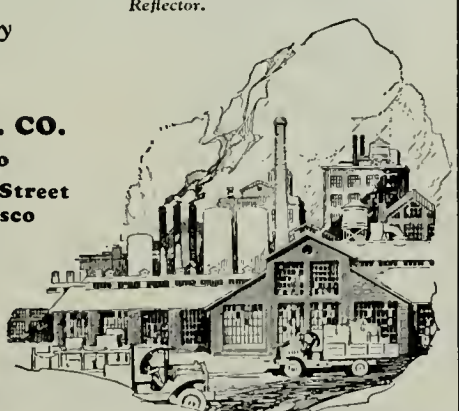
Our nearest office will gladly furnish full information

BENJAMIN ELECTRIC MFG. CO.

847 W. Jackson Blvd., Chicago

247 W. 17th Street **580 Howard Street**
New York **San Francisco**

Toronto and London



BENJAMIN

MATCHES IN BEAUTY AND FINISH THE FINEST FURNISHINGS

This beautiful square tube "California" Wall Bed in either walnut or mahogany finish hung on a "California" Secret Installation door is the latest in design and finish of wall bed construction. The "California" Secret Installation solves the problem of having too many doors and windows and at the same time conforms to the most modern ideas in wall decoration.

Write for Complete Data and Specifications

CALIFORNIA WALL BED COMPANY

714 Market Street, San Francisco

165 Thirteenth Street, Oakland 1040 S. Broadway, Los Angeles

The Ornamentation on the Vase and Plaque was SAND BLASTED *with*

FAN SHELL BEACH SAND

ONE OF THE WHITE SANDS SHIPPED BY

DEL MONTE PROPERTIES COMPANY

Phone Sutter 6130 401 CROCKER BUILDING San Francisco

A charming century-old house in Reading, Pa., that has been modernized by ⅜-inch Bruce Oak Flooring.

The right floor for dancing; when relaxation is in order, the young folks can enjoy themselves at home

⅜-inch Bruce Oak Flooring *for the Old Home*

The charm of the old homestead appeals to the lover of the beautiful, substantially built, correctly designed, with all the charm of association clinging to it.
But modern living requires comforts and conveniences that our forefathers lacked the opportunity to enjoy, and one of the most important details that need attention, is the old softwood floor.

Bruce ⅜-inch oak flooring, made in a special thickness to lay over old floors, will modernize the rooms, saving housework, safeguarding health, and adding beauty and distinction to the appointments. The use of various finishes to harmonize with the different color schemes adopted for each room, affords opportunity for charming variety in treatment.

We will be glad to send you literature helpful to architects and to co-operate with you in any way, if you will write us.

The American Architects Specification Manual contains our standard specifications.

MEMPHIS BRUCE LITTLE ROCK

E. L. Bruce Company

MEMPHIS TENNESSEE

See our Catalog in Sweet's

Largest Makers of Oak Flooring in the World

When writing to Advertisers please mention this magazine.

Silent as the Grave

A span of three-quarters of a century is represented by Trinity Church, standing among the crumbling graves of past generations, and the American Surety Building, facing each other across lower Broadway, New York. This newly completed building is one of the most imposing of the modern skyscrapers that crowd the famous Wall Street district. In keeping with the very latest advances in building construction, the elevator doors in this towering office structure are equipped with 168 sets of R-W "Ideal" Door Closers.

Elevator doors equipped with R-W "Ideal" are closed easily, swiftly, noiselessly and completely with one motion. The graves in the yard of Old Trinity are no more silent than

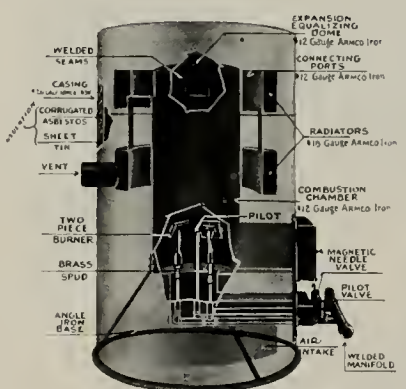
"IDEAL"
Elevator Door Hardware

Write for Catalog EE-21

Richards-Wilcox Mfg. Co.
A Hanger for any Door that Slides
AURORA, ILLINOIS, U.S.A.
Minneapolis Chicago New York Cleveland Los Angeles
Philadelphia Boston St. Louis Indianapolis San Francisco
RICHARDS-WILCOX CANADIAN CO. Ltd
Winnipeg LONDON, ONT. Montreal

San Francisco Office: 525 Market Street

The Electrically Controlled--Gas Fired
McLAUGHLIN FURNACE



burns gas within a Welded Armco Iron Combustion Chamber.

The "Double Radiator" extracts 88% of B. T. U. input, reducing flue gas temperatures from 400 deg. to 300 deg. F. (Smith, Emery & Co. test).

Each of the **Three Separate Burners** is controlled by Magnetic Valves and always consume a constant quantity of gas.

Write for Information

McLAUGHLIN METAL WORKS
223 J Street, Sacramento, Calif.

San Francisco W. P. Goss	Stockton Willard Hardware Co.	Fresno Evans Heating Co.	Chico Hall Metal Works

A Combination Fixture
for Up-to-date Users

THE "Bryn Mawr" Lavatory Fitting is a popular mixer enabling the user to wash in running water tempered to personal likes.

It fits any staple vitreous china lavatory with or without back provided with the proper hole back of the over-flow.

It is in much demand for porcelain enameled lavatories having the 1⅛-inch chainstay hole.

The design is attractive, particularly the nozzle, handles, flanges and knob. All working parts and connections have been designed to insure quickness and ease in installation and to give durable, satisfactory service.

For convenience in rewashering, the thread barrel and stem are removable from the top; the seat can be removed from below.

A plentiful stream is delivered thru the single nozzle.

HAINES, JONES & CADBURY COMPANY
HAJOCA
TRADE MARK
PHILADELPHIA

HAINES, JONES & CADBURY CO.
MAKERS OF PLUMBING SUPPLIES
857-859 FOLSOM STREET, SAN FRANCISCO
PHILADELPHIA-NEW YORK-RICHMOND, VA.-SAVANNAH
JACKSONVILLE-CHARLOTTE

BONDED FLOORS

California State Building, Civic Center, San Francisco, California. Bliss and Faville, architects. George B. McDougall, State of California Supervising Architect.

Over 10,000 square yards Bonded Floors Installed.

Union Oil Building, Los Angeles, California. Curlett and Beelman, architects. Over 11,000 square yards Bonded Floors Installed.

Bonded Floors for Pacific Coast Buildings

Our service is now available throughout the Pacific Coast for furnishing silent resilient floors direct from manufacturer to user with one responsibility and one guarantee covering the five accepted divisions of resilient floors; viz:

Plain color Battleship Linoleum (U. S. Navy, Std. Walton Process).
Cork Carpet (polished and unpolished).
Treadlite Tile (linoleum cork composition).
Rubber Tile (plain and marbleized).
Cork Tile (standard grades and thicknesses).

Ask for our specifications. They assure a high grade job yet give the opportunity for reputable competitors to bid.

BONDED·FLOORS·COMPANY
INCORPORATED
A DIVISION OF THE CONGOLEUM COMPANY, INC.

370 2nd St.
San Francisco

Offices in Principal Cities of the U. S. A.

263 S. Los Angeles St.
Los Angeles

ES
PRODUCTS
ES ELEVATOR ACCESSORIES

ES ILLUMINATED THRESHOLDS
Passengers enter and leave cars quicker and avoid tripping.

ES DIRECTIONAL SIGNS
Tell the public which elevators serve the floors they desire to go to.

ES GUIDE LUBRICATOR
Automatically lubricates the car and counterweight guides.

ES TRAVEL RECORDER
Affords means of checking the cost of elevator operation.

ES STOP RECORDER
Affords a means of comparing efficient and inefficient operators.

ES REVERSE PHASE RELAY
Prevents trouble caused by phase failure or reversal.

AUTOMATIC STARTING SIGNALS
Keep the elevators properly spaced and help the Starter.

SAFE LIFT CALLS Valuable in connection with safe lift elevator.

TELEPHONES Provide means of communication between Starter, Operators, penthouse and engine room.

See Sweet's Architectural Catalog and exhibit at Architects' Samples Corporation (N. Y. C.)

ELEVATOR SUPPLIES COMPANY, INC.

Main Office and Works: HOBOKEN, NEW JERSEY

Branch Offices

CLEVELAND
1039 Walnut Avenue

CHICAGO
111 S. Jefferson Street

SAN FRANCISCO
186 Fifth Street

PHILADELPHIA
1714 Ludlow Street

ST. LOUIS
Railway Exchange Bldg.

House at Cornwall-on-Hudson, N. Y. Finished with Old Virginia White. Rogers & Zogbaum, Architects, New York

Cabot's
Old Virginia White

A Soft, Brilliant White for Shingles, Siding and Similar Woodwork. As Bright and Clean as New Whitewash, and as lasting as Paint.

Architects and others have tried for years to get a paint that would give the same beautiful, brilliant white as new whitewash, and would also be durable and clean and not rub off like whitewash. But paint was always "painty"—hard, cold and heavy. Old Virginia White is a shingle-stain compound that has solved the problem. It is as clean, cool and brilliant as fresh whitewash, and as lasting as paint; but it is not messy like whitewash, nor painty like paint, although it costs less and goes farther than paint.

Send for Sample Shingle and Circular showing other fine houses finished with Old Virginia White

SAMUEL CABOT, Inc., Mfg. Chemists, Boston, Mass.

Cabot's Creosote Stains, Stucco and Brick Stains, "Quilt," Mortar Colors, Dampproofing, Waterproofing, Conservo Wood Preservative, etc.

Pacific Materials Co., San Francisco
Waterhouse-Wilcox Pacific Co., Los Angeles
Theo. F. Snyder, San Diego, Cal.
S. W. R. Dally, Seattle
Cress & Co., Portland
H. G. Lanahan & Co., Spokane, Wash.

MARBLE BATHS

have been in use since the days of Old Rome. They are rich in attractiveness, easy to keep clean, and they never wear out. They can be installed in old buildings as well as new, and the cost, reckoned by years of service, is extremely low.

VERMONT MARBLE COMPANY

San Francisco
Tacoma

PROCTOR,
Vermont

GOOD FOR ALL TIME VERMONT MARBLE

Cast Iron Stairs and Store Fronts

Bank and Office Railings, Elevator Enclosures and Fire Escapes

C. J. HILLARD & CO., Inc.
Nineteenth and Minnesota Streets
Telephone Mission 1763
SAN FRANCISCO, CALIF.

DEPENDABILITY
"Since 1858"

LINOLEUMS
WINDOW SHADES

Carpets
Draperies
Rugs

Estimates furnished

D. N. & E.
Walter & Co.

562-572 Mission Street
SAN FRANCISCO
Los Angeles Portland Seattle

Sacramento County Court House,
Sacramento, Cal.

Specify

COLUMBIA MARBLE

Samples and complete information relative to the use of Columbia Marble sent upon request.

COLUMBIA MARBLE CO.
413 Rialto Building, San Francisco
Telephone Sutter 1244

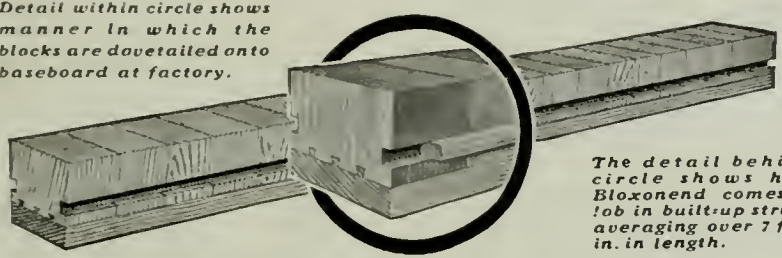
When writing to Advertisers please mention this magazine.

The Name is Descriptive!

BLOXONEND

Bloxonend floors are composed of small Southern Pine blocks literally on end so that the tough end grain is exposed to wear. Laid with splines and nailed, a Bloxonend floor is a smooth, compact substantial unit with no loose blocks to kick out or break the regularity of the surface.

Detail within circle shows manner in which the blocks are dovetailed onto baseboard at factory.



The detail behind circle shows how Bloxonend comes to job in built-up strips, averaging over 7 ft. 6 in. in length.

Write nearest office for Architectural Specifications Today

Carter Bloxonend Flooring Co.

H. M. Holway, District Manager

San Francisco: 1007 Hobart Bldg. Portland: Chamber Com. Bldg. Los Angeles: 600 Metropolitan Bldg.

GLASS

Fuller & Goepp

Manufacturers of

Art and Leaded Glass
MIRRORS

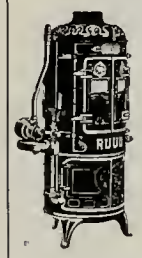
Dealers in *Sani-Onyx* White Glass for Modern Home and Office Fixtures

32 Page Street, San Francisco
Market 498

Jackson at 11th, Oakland
Lakeside 7272

OUR OAKLAND PLANT

Buy This BETTER Water Heater



Better because it gives Perfect Hot Water Service—instantaneous, inexhaustible and inexpensive—not just once in a while, but all the time—
Better because it is simply made—B-tter because it is solidly and ruggedly built—
Better because it is made by men whose experience dates back to 1889, when the world's first successful automatic water heater—a RUUD—was built.
EveryRUUD is equipped with an internal automatic thermostat, double fuel control, condensation sheds.

RUUD HEATER CO.
431 Sutter St. San Francisco
Phone Sutter 1640

Alvaline, Cementoline
and other
Jones-Duncan Products

MAGNER BROTHERS
PAINT MAKERS

Telephone: Market 113
414-424 Ninth St. San Francisco

HEATING-PLUMBING

COMPLETE PLUMBING AND HEATING SYSTEMS INSTALLED IN ALL CLASSES OF BUILDINGS — ALSO POWER PLANTS

GILLEY-SCHMID CO., Inc.
198 OTIS ST., SAN FRANCISCO
Tel. MARKET 965

THE TORMEY CO.

General
Painters

Phone Franklin
5 - 5 - 9 - 8

1042 Larkin St., San Francisco, Cal.

Phone Sutter 1414

Hunter & Hudson
ENGINEERS

Designers of Heating, Ventilating and Wiring Systems, Mechanical and Electrical Equipment of Buildings

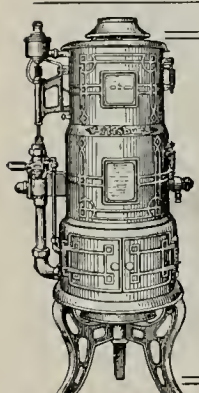
703 Rialto Bldg., San Francisco, Cal.

ELEVATOR ACCESSORIES

We manufacture and install pneumatic elevator door controls and interlocks. (A safety first equipment which has been making good for over ten years.) For information concerning elevator safety and economy we cordially invite you to call

RANDALL CONTROL AND HYDROMETRIC CORPORATION

523 Central Bldg. Los Angeles, Cal. Phone 11901
265A Minna St. San Francisco, Cal. Phone Douglas 2397



Pittsburg

It Insures
Instant
Hot Water
Service

PITTSBURG WATER HEATER COMPANY
478 Sutter S., San Francisco
Phone Sutter 5025

RUSSWIN
BUILDERS' HARDWARE

JOOST BROS., Inc.
SAN FRANCISCO AGENTS

We Carry Complete Stock:
Fishing Tackle—Guns—Mechanics' Tools—Paints—Crockery and Glassware—Stoves—Household Goods. Telephone Market 891.

NO BRANCH STORE
Mazda Lamps Electric Goods

When writing to Advertisers please mention this magazine.

PACIFIC MANUFACTURING COMPANY
MILL WORK, SASH AND DOORS
HARDWOOD INTERIOR TRIM A SPECIALTY
MAIN OFFICE: SANTA CLARA, CALIFORNIA
SAN FRANCISCO, 177 Stevenson Street — LOS ANGELES, 908 Washington Building
OAKLAND, 1001 Franklin Street — SAN JOSE, 16 North First Street

LARSEN-SIEGRIST CO., Inc.
BUILDING CONSTRUCTION
807 Claus Spreckels Building — SAN FRANCISCO

HEATING — PLUMBING
VENTILATION — SHEET METAL WORK
FLOOR AND WALL TILING
SCOTT CO., INC.
243 MINNA STREET — SAN FRANCISCO

VAN EMON ELEVATOR COMPANY
PASSENGER ELEVATORS FREIGHT
1159-65 Howard Street — Market 808 — San Francisco, Calif.

Electric Wiring
Fixtures and Lighting Systems Installed
Motors Installed
A. F. WELLS CO.
Electrical and Mechanical Engineers — Contractors
155 Second St.
San Francisco, Cal.
Douglas 1820
Telephone, Buzzer, and Intercommunicating Systems
Electric Appliances
Estimates Furnished

Res. Tel. Merritt 3600
HERBERT BECKWITH
Building Construction
Formerly with ARTHUR ARLETT — Everson Building OAKLAND

JOHN M. BARTLETT
GENERAL CONTRACTOR
Office 357 - 12th ST. OAKLAND — Phone Lakeside 6750 — Res. Phone Berkeley 6884W

For Information on Public Seating *Consult*
WESTERN STATES SEATING COMPANY
39 Second Street, San Francisco — 2133 Kern Street, Fresno, Calif. — 1040 So. Broadway, Los Angeles, Calif.

When writing to Advertisers please mention this magazine.

SCHOOL AND THEATRE EQUIPMENT
FLAGG STUDIOS SAN FRANCISCO LOS ANGELES
DESIGNERS AND MANUFACTURERS
Drop Curtains, Automatic Hoists
Stage Hardware, Scenery
"Hitch Your Desires to Our Experience"

Phone Franklin 548
I. R. KISSEL
Decorator, Painter and Paperhanger
1747 SACRAMENTO ST., Bet. Polk St. and Van Ness Ave., SAN FRANCISCO

ROBERT TROST PHONE MISSION 2209
General Building Contractor
We Specialize in High Grade Work and Employ Skilled Labor in every Branch of the Building Industry.
26th and Howard Streets
SAN FRANCISCO

Phone Sutter 1533
ALFRED H. VOGT
GENERAL CONTRACTOR CONCRETE CONSTRUCTION
185 Stevenson Street, San Francisco

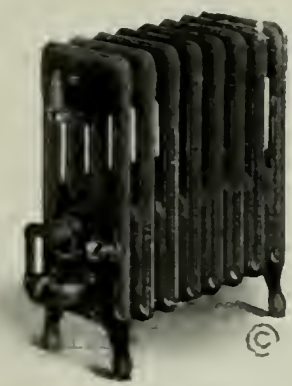
LAWTON & VEZEY
CONTRACTORS AND BUILDERS
EVERSON BUILDING OAKLAND, CALIFORNIA

MONSON BROS.
Building Construction
Yard
Mariposa and Bryant Streets
Phone Market 2963
251 Kearny Street, San Francisco
Telephone Douglas 6619

JOHN A. PETERSON, President B. HEINRICH, Vice-President
SAN FRANCISCO ELEVATOR CO., Inc.
ELEVATORS
Automatic, Electric, Hydraulic, Belt Power, Automatic Dumbwaiters and Handpower Machines, Push Button Passenger Elevators a Specialty
Telephone Kearny 2443 860 FOLSOM STREET, SAN FRANCISCO

HANNAH BROS.
CONTRACTORS AND BUILDERS
142 Sansome Street, San Francisco
Members Builders Exchange Phone Douglas 1577

When writing to Advertisers please mention this magazine.



"Williams Service"

Complete Steam Heating Installation

Employing Clow Gasteam Radiators
in Apartments, Schools, Churches, Residences, Commercial Buildings
Perfect Heat — Automatic Control
No Odor — Normal Humidity

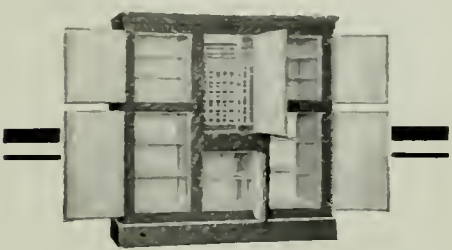
Williams Radiator Company
571 MISSION STREET
Telephone Douglas 8230 SAN FRANCISCO

McCRAY
REFRIGERATORS *for* ALL PURPOSES

Send a sketch of your client's requirements and McCray engineers will gladly submit, without obligation, plans for specially built refrigeration equipment to meet particular needs. We carry in stock, for prompt shipment, refrigerators of all sizes and types.
Get the latest McCray catalogs for your files.

No. 95—for Residences No. 64—for Markets
No. 72—for Grocers No. 75—for Florists
No. 53—for Hotels and Institutions

McCRAY REFRIGERATOR CO.
2363 LAKE STREET
KENDALLVILLE, IND.
San Francisco Office, 765 Mission Street



For large residences

Specify

TRADE MINWAX MARK

Brick and Cement Coating for Exterior Brick and Plastered Walls

A permanent coating that is absolutely waterproof and positively will not flake, peel or craze.

Waterproof your buildings while they are dry

Send for Booklet on Products, Data and Specifications

MINWAX CO., INC.

K. M. HAYDEN
22 Battery St.
San Francisco

W. C. LEA
653 So. Clarence St.
Los Angeles

VLAARITE ENAMEL

The highest quality white finish it is possible to produce.

VLAARITE Enamel produces an ideal enamel finish that will be a credit to the finest residence or public building interiors.

Specify

Vlaarite

Oakley Paint Mfg Co.

Paints, Varnishes, Enamels

727 Antonio Street, Los Angeles
833 Hearst Bldg., San Francisco

I. M. SOMMER & CO.
ENGINEERS AND GENERAL CONTRACTORS
CONCRETE CONSTRUCTION
Phone Hemlock 1100
901 BRYANT ST., SAN FRANCISCO

K. E. PARKER COMPANY, Inc.
GENERAL CONTRACTORS
Phone Sutter 5661
Room 515 Clunie Building, SAN FRANCISCO

R. W. LITTLEFIELD
Building Construction
357 12th Street, Room 9, Oakland, Cal.
Phone Lakeside 6750

H. H. HILP, Jr.
J. FRANK BARRETT
BARRETT & HILP
CONCRETE CONSTRUCTION BUILDERS GENERAL CONTRACTORS
918 HARRISON STREET, near 5th, SAN FRANCISCO
Telephone DOUGLAS 700

CAEN STONE
A refined, elegant, interior finish.
A. KNOWLES
CONTRACTOR AND PLASTERER
442 Call-Post Building
San Francisco

STEELFORMS Signify ECONOMY, RAPIDITY, and EFFICIENCY
STEELFORM CONTRACTING COMPANY
STEELFORMS FOR CONCRETE BUILDINGS
C. B. Hopkins, C. E., Manager
681 Market Street, San Francisco
CONCRETE JOIST FLOOR CONSTRUCTION

Phone Piedmont 2079W
DAVID NORDSTROM
GENERAL CONTRACTOR
4146 Emerald Street, Oakland

M. E. VUKICEVICH
SPENCER B. BAGGE
VUKICEVICH & BAGGE
GENERAL CONTRACTORS
Phone Sutter 5691
815 Bryant Street, San Francisco

432 Bryant St.
SAN FRANCISCO
Douglas 2676

Standard Fence Co.

60th and Lowell Sts.
OAKLAND
Tel. Piedmont 646

WIRE AND IRON WORKS

DESIGNERS—BUILDERS
HOME AND ESTATE FENCE
AVIARY and TENNIS COURT FENCE

WIRE GRILL WORK—WIRE SCREEN
FLEXIBLE WIRE CONVEYOR BELT
WIRE SPECIALTIES

1922 Santa Fe Avenue, Los Angeles, Cal. Phone 67188

Steel Bars

FOR CONCRETE REINFORCEMENT
Cut to Length, Fabricated, Installed

Tel. Douglas 3466 BADT-FALK & CO.
346 Call-Post Bldg., 74 New Montgomery St., San Francisco

FLOWERING EUCALYPTUS
The Flaming Gum Tree of Australia (Eucalyptus Fecifolio)
A mass of flame-colored bloom through the summer months
LIMITED SUPPLY OF SMALL TREES FOR SALE FOR FALL AND SPRING PLANTING
A. K. Wallis
Telephone Berkeley 674-N 2628 Shattuck Ave. Berkeley, Calif.

PACIFIC DEPARTMENT
GLOBE INDEMNITY COMPANY
Bonds and Casualty Insurance for Contractors
FRANK M. HALL, formerly Robertson & Hall, Mgr.
444 California Street Phone Sutter 2280 SAN FRANCISCO

CARL H. PETERSON
BUILDER
PHONE DOUGLAS 1876 185 STEVENSON STREET SAN FRANCISCO

PHONE DOUGLAS 2370
R. McLERAN & CO.
GENERAL CONTRACTORS
HEARST BUILDING SAN FRANCISCO, CAL.

D. ZELINSKY & SONS
PAINTERS AND DECORATORS
165 GROVE STREET SAN FRANCISCO

SPENCER ELEVATOR COMPANY W WESTINGHOUSE EQUIPMENT SAN FRANCISCO CAL.

Passenger and Freight Elevators
For Every Service
SPENCER ELEVATOR COMPANY
166-180 Seventh Street San Francisco

When writing to Advertisers please mention this magazine.

TEMPERATURE REGULATION
JOHNSON SERVICE COMPANY

Manufacturers and Installers of JOHNSON Heat / Humidity CONTROL
For schools, residences, hospitals, banks, public buildings, also canneries and all kinds of industrial plants—Hot water tank regulators, air and water reducing valves.
Rialto Bldg., SAN FRANCISCO; 605 Van Nuys Bldg., LOS ANGELES

Atlas Heating and Ventilating Co., Inc.
ENGINEERS AND CONTRACTORS
STEAM AND HOT WATER HEATING—PIPE AND PIPELESS FURNACES
SHEET METAL WORK PATENT CHIMNEYS
Everytbing in Heating
Phone Douglas 378 557-567 Fourth Street San Francisco

CLARENCE DRUCKER HERMAN LAWSON
LAWSON & DRUCKER
PLUMBING—HEATING—CONTRACTORS
450 HAYES STREET
TELEPHONE MARKET 275 SAN FRANCISCO, CAL.

H. G. NEWMAN CO.
PLUMBING HEATING
OAKLAND 3329 2004 TELEGRAPH AVENUE OAKLAND

ALEX COLEMAN
CONTRACTING PLUMBER
706 ELLIS STREET, SAN FRANCISCO Phone FRANKLIN 1006

WM. F. WILSON COMPANY
MODERN SANITARY APPLIANCES
Special Systems of Plumbing for Residences, Hotels, Schools, Colleges, Office Buildings, Etc.
Phone Sutter 357 328-330 Mason Street, San Francisco

W. H. PICARD
Plumbing, Heating, Ventilating and Power Plants
5656 College Avenue
5662 Keith Avenue
Piedmont 7522 Oakland, Calif.

CARL T. DOELL
PLUMBING HEATING
467 21st Street, Oakland, California Telephone Oakland 3524

Specify
LOWELL
Rubber Covered
WIRE

LOWELL INSULATED WIRE CO.
LOWELL, MASS.

LAMP CORDS
AND CABLE

Inspection Tag on Every Coil

PITTSBURGH
MIRRORED
REFLECTORS

For Show Windows and Special Lighting

GUARANTEED for 5 years
The Efficient Lighting Reflector

Best By Test

CONNECTICUT

Telephones and Annunciators

For Apartment Houses, Schools, Banks, Public Buildings, Hotels, Etc.

Have given satisfaction for the past 28 years

Let us solve your Interior Telephone Problems

Special attention given the Architects Electrical Problems.
We will gladly assist in preparation of layouts.

MYERS & SCHWARTZ

MANUFACTURERS AGENTS

90 New Montgomery Street
and
Furniture Exchange
San Francisco

1119 So. Los Angeles St.
Los Angeles
1626 Eighth Avenue
Seattle, Wash.

For the public park, school yard or children's playground.

The Haws Vitreous China Pedestal (Model 12) Sanitary Drinking Fountain

Haws Sanitary Drinking Faucet Co.
1808 Harmon Street, Berkeley

San Francisco Office Buildings

The November
Architect and Engineer
will show some interesting views of the new skyscrapers in the Bay City, together with Plans and Working Drawings

DON'T FAIL TO READ THIS NUMBER

The Architect and Engineer
626 FOXCROFT BUILDING
SAN FRANCISCO

ACORN
HARDWOOD FLOORS

Guarantee complete floor satisfaction by specifying

"Acorn Brand" Oak Flooring

Architects and contractors are proving this by actual practice.

Strable Hardwood Co.
HARDWOOD LUMBER
511-545 First St., Oakland, Calif.
Phone Oakland 245

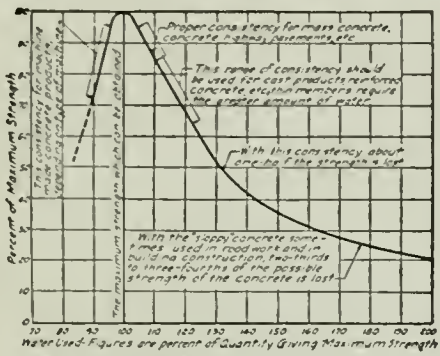
BEAUTIFUL GARDEN EFFECTS for the City and Suburban Home

MacRORIE-McLAREN CO.
Landscape Engineers and General Nurserymen

Office
Beresford Suite 301 Phelan Bldg.
San Francisco

Nurseries at
San Mateo Co.

When One Pint of Water Wastes Two Pounds of Cement


Percent of Maximum Strength
Proper consistency for mass concrete, concrete highway pavements, etc.
This range of consistency should be used for cast products reinforced concrete, etc., thin members require the greater amount of water
With this consistency about one-half the strength is lost
With the "sloppy" concrete sometimes used in road work and in building construction, two-thirds to three-fourths of the possible strength of the concrete is lost
The maximum strength which can be obtained
70 80 90 100 110 120 130 140 150 160 170 180 190 200
Water Used-Figures are percent of Quantity Giving Maximum Strength

Effect of Quantity of Mixing Water on the Compressive Strength of Concrete
NOTE. In general construction, the maximum strength can rarely be obtained, but it is possible to obtain 70 to 90 per cent of the maximum strength without additional expense by restricting the quantity of mixing water.

Observe this curve closely. It shows impressively the effect of the quantity of mixing water on the strength of concrete.

It is now known that excess mixing water, not only weakens concrete, but that it is actually wasteful of cement. One pint of water more than necessary in a one-bag batch decreases the strength and resistance to wear as much as though two or three pounds of cement were left out.

Here is a fact, which if brought home to the superintendent and the foreman, can be of great practical value in raising quality on the job.

Wouldn't you like to have, right at hand for quick reference, a practical manual which tells how the quantity of mixing water can be closely controlled, so as to give concrete greater strength without using any more cement?

Then write today for our free booklet, "Concrete Data for Engineers and Architects." We will be glad to send you extra copies for superintendents and foremen.

Take full advantage of the service the Portland Cement Association has to offer. One of the District Offices of the Association is always near you. Get acquainted with it.

PORTLAND CEMENT ASSOCIATION
A National Organization
to Improve and Extend the Uses of Concrete

Atlanta	Denver	Kansas City	New York	San Francisco
Birmingham	Des Moines	Los Angeles	Parkersburg	Seattle
Boston	Detroit	Memphis	Philadelphia	St. Louis
Chicago	Helena	Milwaukee	Pittsburgh	Vancouver, B.C.
Dallas	Indianapolis	Minneapolis	Portland, Oreg.	Washington, D.C.
	Jacksonville	New Orleans	Salt Lake City	

S. & S. TILE CO.

MANUFACTURERS OF

HAND-MADE TILES FOR WALLS AND FLOORS. REPRODUCTIONS OF OLD SPANISH AND MOORISH GLAZED TILES

Factory, 4th and Carrie Sts. San Jose, Cal.

JAS. I. KRUEGER

Representing
Illinois Engineering Company, Chicago
Eureka Brass Works, Cincinnati

Manufacturers of

Vacuum and Vapor Steam Heating Materials, Power Plant Equipment
Standard Radiator and Gate Valves, Pumps for Vacuum Systems of Heating

557-559 Pacific Building, San Francisco Telephone Sutter 7057

CHARLES T. PHILLIPS COMPANY

CONSULTING ENGINEERS

HEATING, VENTILATING, ELECTRIC WIRING, PLUMBING

Roberts Building, Los Angeles

CYCLOPS IRON WORKS

ICE MAKING and REFRIGERATING MACHINERY, TRAVELING CRANES

Office and Works:
837-847 FOLSOM ST.

SAN FRANCISCO, CAL.

Telephone:
SUTTER 3030

GRINNELL AUTOMATIC SPRINKLER

GRINNELL COMPANY
OF THE PACIFIC

VALVES
PIPE and FITTINGS

ENGINEERS AND CONTRACTORS
453 Mission Street, San Francisco

CHEMICAL FIRE EXTINGUISHERS and FIRE ENGINES

Fire Protection Engineering Company

ENGINEERS AND CONTRACTORS

Automatic Sprinkler Systems
Automatic Fire Alarm Systems
Watchman Detector Systems

Executive Offices and Factory
67 MAIN STREET
San Francisco, California

Chemical Engines
Hand Fire Extinguishers
Motor Driven Fire Apparatus

CLINTON CONSTRUCTION COMPANY

of California

BUILDERS AND MANAGERS OF CONSTRUCTION

923 Folsom Street San Francisco

RADIATOR AIR VALVES

Traps, Rapid Riser Vents, Vacuum and Condensation Pumps

They Are Absolutely Guaranteed

JAS. P. MARSH & CO., Represented by HULTING, HURST & HULTING

Monadnock Building (Telephone Sutter 5295), San Francisco, Cal.

The Harkness Memorial Tower at Yale

and ATLAS WHITE PORTLAND CEMENT

SOMEONE has called great architecture "frozen music"—a name well justified when applied to such monumental work as the Memorial Quadrangle at Yale, created by James Gamble Rogers. Towering above the group is the Harkness Memorial Tower, a fitting crown to the whole.

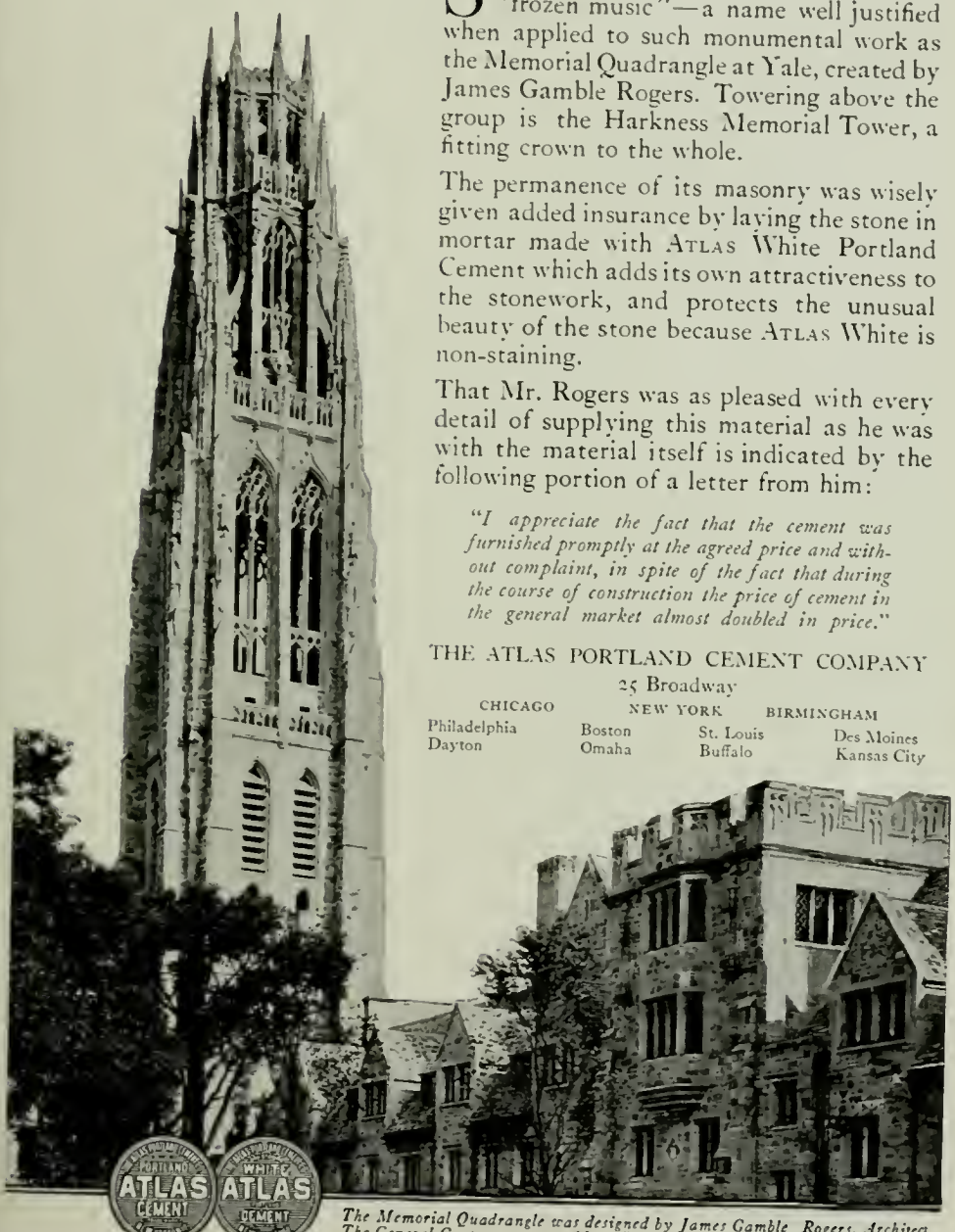
The permanence of its masonry was wisely given added insurance by laying the stone in mortar made with ATLAS White Portland Cement which adds its own attractiveness to the stonework, and protects the unusual beauty of the stone because ATLAS White is non-staining.

That Mr. Rogers was as pleased with every detail of supplying this material as he was with the material itself is indicated by the following portion of a letter from him:

> *"I appreciate the fact that the cement was furnished promptly at the agreed price and without complaint, in spite of the fact that during the course of construction the price of cement in the general market almost doubled in price."*

THE ATLAS PORTLAND CEMENT COMPANY
25 Broadway

CHICAGO	NEW YORK		BIRMINGHAM
Philadelphia	Boston	St. Louis	Des Moines
Dayton	Omaha	Buffalo	Kansas City



The Memorial Quadrangle was designed by James Gamble Rogers, Architect
The General Contractors were Marc Eidlitz & Son, Inc.

CALIFORNIA ARTISTIC METAL & WIRE CO.
J. T. McCORMICK, PRESIDENT
ORNAMENTAL IRON AND BRONZE
349-365 SEVENTH ST. SAN FRANCISCO

MORTENSON CONSTRUCTION CO.
CONTRACTORS FOR STRUCTURAL STEEL AND IRON
H. MORTENSON, President
Office and Shops: Corner 19th and Indiana Streets
Phone: Mission 5033 SAN FRANCISCO, CAL.

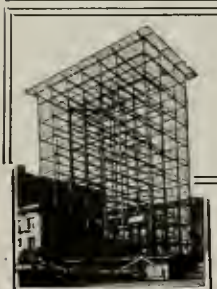
JUDSON MANUFACTURING COMPANY
Main Office:
817-821 FOLSOM STREET
Telephone Sutter 6820
SAN FRANCISCO
Structural Steel and Iron Work
Works:
OAKLAND—EMERYVILLE
CALIFORNIA
C. C. SAUTER, Chief Engineer

Federal Ornamental Iron & Bronze Co.
Bank Counter Screens and Grille Work Our Specialty
Most Modern Equipment Throughout
Recent Contracts: BANK OF ITALY, FIRST NATIONAL BANK
16th Street and San Bruno Avenue, San Francisco Phone Market 1011

HERRICK IRON WORKS
STRUCTURAL STEEL
Office and Works, 18th and Campbell Streets
Oakland, Cal. Phone Lakeside 1460

Telephone Mission 58 A. A. DEVOTO, President
CENTRAL IRON WORKS, Inc.
STRUCTURAL STEEL
Office 2050 BRYANT STREET SAN FRANCISCO, CAL.

C. F. HOFFMAN L. W. FLIEGNER
Golden Gate Iron Works
STRUCTURAL STEEL AND ORNAMENTAL IRON CONTRACTORS
Howard and 11th Streets San Francisco



SCHRADER IRON WORKS, Inc.
STRUCTURAL STEEL CONTRACTORS
Fire Escapes, Waterproof Trap Doors, Ornamental Iron Work
1247-1249 HARRISON STREET SAN FRANCISCO, CAL.
Bet. 8th and 9th Telephone Market 337

When writing to Advertisers please mention this magazine.

for beauty-

Tropico Tiles

TROPICO QUARRY TILES in red and buff shades are a distinctive and durable floor material.

TROPICO FAIENCE TILES in a variety of dull glazes and textures are the ideal materials for mantels, sun-rooms, bathrooms, and all interior and exterior decorative treatment where tiles of permanent, soft coloring are desired.

Sold by all tile dealers.

Look for the name TROPICO on your tiles.

TROPICO POTTERIES Inc.
GLENDALE - CALIFORNIA

THE HEART OF A BUILDING IS ITS PIPING EQUIPMENT

A complete line for the Piping Features of Buildings — Power, Plumbing, Heating, Ventilating, Refrigerating, Vacuum-Cleaning, Gas, Water, etc.—is furnished by Crane Co. through the Plumbing and Heating trade.

The Architect, Engineer and Builder, or Investor, may enjoy, through the facilities of this Company, the distinct advantage of dealing entirely with one Competent and Responsible House.

Exhibit Rooms, Offices and Warehouses in San Francisco and Oakland and Fifty-one other cities.

CRANE CO.

1855—1918

VALVES and FITTINGS

Genuine Hyloplate Blackboards
Best Pennsylvania Slate Blackboards
School Furniture
Western Venetian Blinds
Lockers

C. F. WEBER & CO.

San Francisco — Reno
Los Angeles — Phoenix

The GOLD MEDAL MAIL CHUTE

INSTALLED IN THE NEW SAN FRANCISCO CITY HALL AND THE WHITE MARBLE MERRITT BUILDING LOS ANGELES

Given highest award at Panama-Pacific International Exposition 1915

Waterhouse-Wilcox Co.
California Representatives

523 MARKET Street
SAN FRANCISCO

331 E. 4TH STREET
LOS ANGELES

F. T. CROWE & CO.
Seattle, Wash.

The J. McCracken Co.
Portland, Ore.

American Mailing Device Corporation

BUTTE ELECTRIC AND MFG. CO.
PAUL BUTTE, Owner
HIGH GRADE ELECTRICAL INSTALLATIONS
FEDERAL ELECTRIC BANK PROTECTION SYSTEMS
DOUGLAS 145 534 Folsom Street San Francisco

H. S. TITTLE
CONTRACTING ELECTRICAL ENGINEER
85 COLUMBIA SQUARE, SAN FRANCISCO Phone HEMLOCK 2865

To Be "Low Bidder" Not Always Our Aim
"QUALITY AND SERVICE ALWAYS"
Our nation-wide organization and large experience in this field assure you always of fair estimates and absolute satisfaction. Electrical Appliances
F. E. NEWBERY ELECTRIC CO.
Alta Building, 381 Bush Street, San Francisco Phone Sutter 6361

San Francisco, Cal. Oakland, Cal. Los Angeles, Cal.
NE PAGE, McKENNY CO.
Electrical Engineers and Contractors
Phone Sutter 2369 589 Howard St., San Francisco, Cal.

BERKELEY ELECTRCIAL COMPANY
ELECTRICAL CONTRACTORS—FIXTURES
2142 Center St. PHONE BERKELEY 8747 Berkeley, Calif.

AUTOMATIC ELECTRIC CO.
PAX—Private Automatic Telephone Exchanges. We are now installing a complete system in the new Federal Reserve Bank, San Francisco. Ask for our engineer to call.
DIRECT LINE TELEPHONE CO., *Agents*
37 CALIFORNIAST. Telephone Douglas 722 SAN FRANCISCO

Office Phone Piedmont 391
KING'S ELECTRICAL CO.
ELECTRIC WIRING
BUILDERS' EXCHANGE OAKLAND, CALIF.

Browne-Langlais Electrical Construction Co.
Agents for
ROBBINS and MYERS MOTORS, PACKARD MAZDA LAMPS
313 FIFTH STREET, SAN FRANCISCO
Telephone Douglas 976

1828—MOTT—1922

Architects and their clients are invited to visit our show rooms, 553-555 Mission St. San Francisco, D. H. Gulick, manager.

Los Angeles Office—721 Central Bldg.

MOTT COMPANY
of California

DOUGLAS 2046 FELIX BUTTE

BUTTE ELEC. EQUIPMENT CO.

Trade Mark BEECO Registered

ELECTRICAL CONTRACTORS

530 FOLSOM STREET SAN FRANCISCO

L. SIEBERT DESIGNERS AND MANUFACTURERS OF J. GENSLER

SWITCH BOARDS · PANEL BOARDS
PROTECTIVE POWER PANELS

Drendell Electrical and Mfg. Co.

DEMCO

1345-47
HOWARD STREET
SAN FRANCISCO,
CALIF.

PHONES
MARKET 1753
1754

MUELLER

Faucets give full value in wear and service.

The MUELLER COMBINATION SINK FAUCET is especially desirable—Hot, Cold or Tempered water through spout or spray?

THE NEWEST AND BEST THING IN FAUCETS

H. MUELLER MFG. CO.

1072-76 HOWARD STREET SAN FRANCISCO, CALIF.

MILLER FOLDING IRONING BOARD

ELIMINATES WALL CABINET—IS INSTALLED IN KITCHEN CUPBOARD

NO { PLASTER GROUNDS / CASING OR PAINTING — SAVES { WALL SPACE AND LABOR / TIME AND MATERIAL

Exhibited and sold by { LANNOM BROS. MFG. CO / 362 Magnolia St., Oakland, Calif.

Send for Catalogue to { W. N. MILLER / 844 Thirteenth St., Oakland

PACIFIC ELECTRIC CLOCK CO.

J. J. Estabrook

Manufacturers and distributors of Electric Clock Systems and Time Keeping Devices for Schools, Public and Private Buildings. Plans and Specifications prepared by competent engineers without charge.

86 THIRD STREET
SAN FRANCISCO, CALIF.

C. F. STAUFFACHER, President — A. A. STAUFFACHER, Vice-President

THE FINK & SCHINDLER CO.

Manufacturers of INTERIOR WOODWORK AND FIXTURES
BANK, OFFICE AND STORE FITTINGS
SPECIAL FURNITURE

218-228 THIRTEENTH STREET, Bet. Mission and Howard Sts. — SAN FRANCISCO, CAL. Telephone Market 474

QUALITY **ARISTO PAINTING CO.** RELIABILITY

SPRAY PAINTING

COMMERCIAL AND INDUSTRIAL PAINTERS

Phone Douglas 4779 — 39 Tehama Street, San Francisco — Roofs Repaired

ERNEST HELD, General Manager

HOME MANUFACTURING CO.

BANK, STORE AND OFFICE FITTINGS
FURNITURE AND HARDWOOD INTERIORS
CABINET WORK OF EVERY DESCRIPTION

543 and 545 BRANNAN ST. Phone Kearny 1514 — San Francisco, Cal.

Mullen Manufacturing Co.

BANK, STORE AND OFICE FIXTURES—CABINET WORK OF GUARANTEED QUALITY—CHURCH SEATING

Office and Factory:
Telephone Market 8692 — 64 Rausch St., Bet. 7th and 8th Sts. San Francisco

JAMES L. McLAUGHLIN

GENERAL CONTRACTOR

Phones Douglas 6645—6646 — 251 KEARNY STREET, SAN FRANCISCO

Dolan Wrecking & Construction Co.

(D. J. DOLAN)

Lumber, Lath, Nails, Shingles, Doors, Windows and Plumbing Supplies, New and Second Hand

Phone Market 4264 — Office and Yard, 1607-1639 MARKET ST., SAN FRANCISCO

When writing to Advertisers please mention this magazine.

Fire Protection Corporation

Engineers and Contractors

FOR

Automatic

Sprinkler Systems

315 Montgomery St. San Francisco, Cal.

Phone Sutter 2993

Phone Doug. 3123-4 Oak. 5050-I

EASYSET

STORE FRONTS

GLASS OF ALL KINDS

Mirrors Art Bevel Plate

Cobbledick-Kibbe Glass Co.

666-668 HOWARD ST.
SAN FRANCISCO, CAL.

WASHINGTON AT THIRD ST.
OAKLAND, CAL.

WIRING

CONTRACTORS CENTRAL ELECTRIC CO. AND DEALERS

177-179 Minna Street, San Francisco

Phone Douglas 4832

A BETTER IRON TONCAN METAL

Phone Douglas 3775

United Alloy Steel Corporation

CANTON, OHIO

Black Galvanized and Blue Annealed Sheet

WESTERN SALES OFFICES

Santa Fe Building, San Francisco

LOS ANGELES
528 Title Insurance Bldg.

PORTLAND
301 Henry Building

REMILLARD BRICK CO.

Est. 1869

Manufacturers

COMMON BRICK

332 Phelan Building
San Francisco, Calif.

Plants: San Jose, Pleasanton

The Fidelity and Casualty Company of New York

CASUALTY INSURANCE
and SURETY BONDS

California Office
Balfour Building San Francisco

Assets, $27,000,000; Surplus, $7,000,000

JOHNS-MANVILLE, Inc.

of California

SERVICE TO ARCHITECTS

Architectural Acoustics and Sound-Proofing, "Colorblende" Asbestos Shingles, Asbestos Prepared Roofings, Asbestos Built-up Roofings, Mastic Industrial Flooring, Keystone Hair Insulating and Sound-Deadening.

JOHNS-MANVILLE SERVICE COVERS THE CONTINENT

JOHNS-MANVILLE, Inc.
of California

DISPLAY ROOM
500 POST STREET
San Francisco

"BLAZING" THE TRAIL

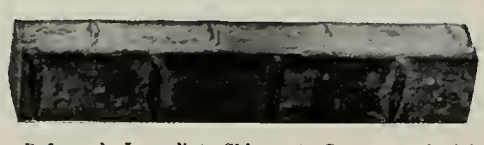
We've been doing it for many years—giving the Sportsman Better Value for Quality than he ever before received. "Value at a Fair Price" in everything for the Sportsman.

The Ellery Arms Company

583-85 MARKET ST
SAN FRANCISCO, CAL

SEND FOR CATALOG *The Sign of Quality*

OPEN HEARTH
REINFORCING STEEL BARS

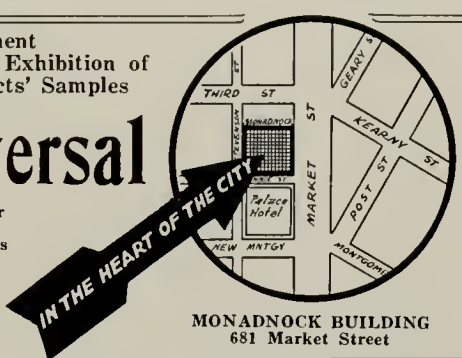


Square Deformed—Immediate Shipment—Cut to required lengths
PACIFIC COAST STEEL COMPANY
Sales Office, Rialto Building SAN FRANCISCO Phone Sutter 1564

JOHN TRAYNOR CHARLES HARCOURT
OCEAN SHORE IRON WORKS
Manufacturers of
BOILERS, STEEL TANKS, STEEL PLATE SPECIALTIES
Dealers in
BOILERS, TANKS, PUMPS, ENGINES
GENERAL MACHINERY, ETC.
Office and Works:
550-558 EIGHTH STREET
Phones Market 462 and 463
SAN FRANCISCO, CAL.

Pack your Radiator Valves with
Palmetto Twist Packing
It can be unstranded to fit any
size Valve. It does not get hard
H. N. COOK BELTING CO.
401-433 Howard St., San Francisco, Cal.

A Permanent
Exhibition of
Architects' Samples
Universal
Visit Our
Showrooms
PHONE
DOUGLAS 93



MONADNOCK BUILDING
681 Market Street

Building Materials,
Engineering Equipment
Specialties
Exhibits
Plan to
Display Your Products
SAN FRANCISCO, CALIF.

Look for this Trademark

And if it's there don't worry any more about your Valves and Fittings

Specify and insist upon having

The Kelly & Jones Co. Valves and Fittings

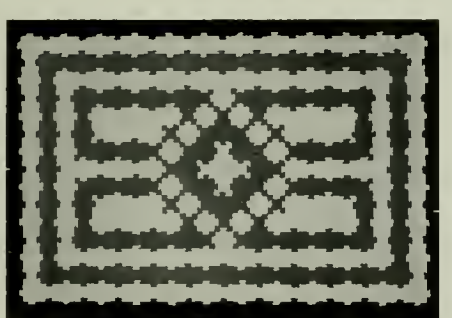
Byers Genuine Wrought Iron Pipe

Republic Steel Pipe

Complete Line of Plumbing Supplies
Large Stocks for Prompt Delivery
Catalogue on request

California Steam & Plumbing Supply Co.

671-679 Fifth Street, Corner Bluxome
SAN FRANCISCO CALIFORNIA



INTERLOCKING RUBBER TILING

The Elevator Floor

whether in Office Building, Hotel or Department Store, is subjected to a great deal of wear and tear.

—SPECIFY—

INTERLOCKING RUBBER TILING

and you've provided your client's building with a Durable, Economical, Practical material that is sure to give satisfaction. Twenty tons installed in the Standard Oil Building, San Francisco. Stock on hand for immediate delivery.

NEW YORK BELTING AND PACKING CO.

NEW YORK

San Francisco Branch 519 MISSION ST. Phone Douglas 1837

Small booklet of designs mailed on request

VIEW AT NILES PLANT

CRUSHED ROCK
GRAVEL **For Building and Road Construction**
SAND **COAST ROCK AND GRAVEL CO.**
500 Call Building SAN FRANCISCO Phone Sutter 3990
Plants at Nilea, Fair Oaks, Oroville, Eliot, Piedra, Solo, and Marysville

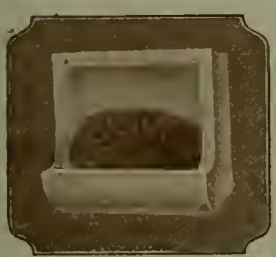
THE WORLDS WORD FOR ELEVATOR SAFETY
Otis

The Architect who specifies OTIS ELEVATORS may do so with the assurance that the responsibility of the Otis Elevator Company extends beyond satisfactory installation. Buildings equipped with OTIS ELEVATORS enjoy the advantage of prompt service and careful inspection rendered by over a hundred Otis offices.

OTIS ELEVATOR COMPANY
2300 STOCKTON ST. SAN FRANCISCO
OFFICES IN ALL PRINCIPAL CITIES

Why is tile soaked in water before it is used

Combination Soap Holder and Safety Grip



Sponge Holder

Tumbler Holder

The reason tile and china must march hand in hand

AS EVERY tile contractor knows, tile must be soaked before it is installed in bathroom walls. This soaking is necessary in order to prevent undue absorption, by the porous tile, of the moisture contained in the cement. Otherwise, the cement would dry too quickly, crumble and, in a short time, the tile would loosen, project or tilt and make the wall uneven. Another thing, after tile has been in service 3 months notice the series of fine cracks in the thinly glazed surface.

Just so with tile built-in bathroom fixtures. They, too, are porous. The thin glazed surface of the tile quickly becomes cracked and crazed. Through continuous daily use, these crack admit soapy water or other liquids. Soon the tile fixtures become stained and unsightly to the eye.

Because of this quality, tile should only be used for covering walls, while, for fixtures, Fairfacts China Bathroom Fixtures should be used. They never crack, craze or stain. Fairfacts Fixtures are made of solid snow-white china which refuses to absorb the moisture and foreign matter. For dignity, grace of line and variety of design they are unmatched.

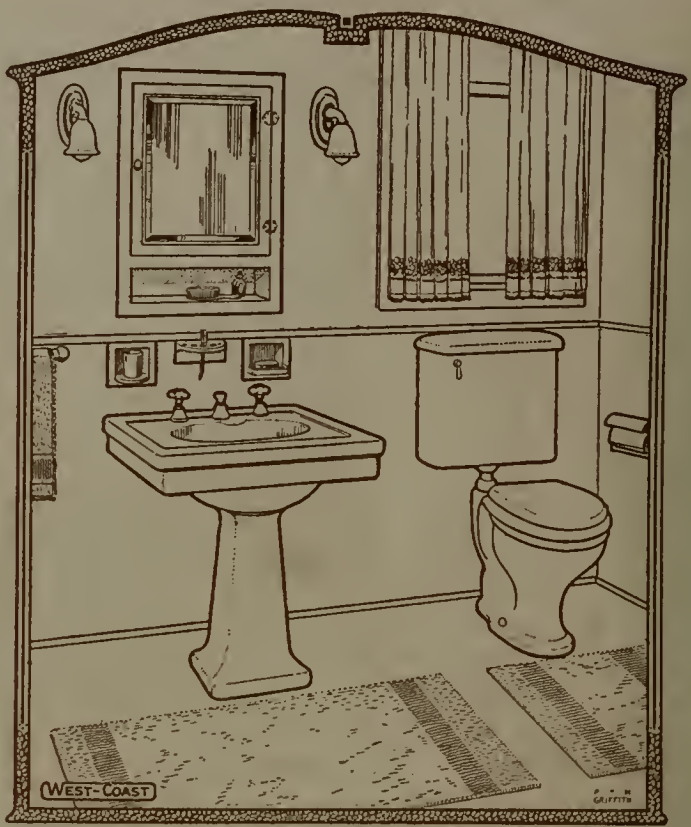
Write for Catalog F. Details and specifications also appear in Sweets Catalog.

Fairfacts Fixtures are installed by tile contractors—the only trade that does this work and should be included in the tile contract. We do not sell the plumbing trade. The Fairfacts Company, Inc. Dept. E, 234-236 W. 14th Street, New York City.

(Look for this BATHROOM Fairfacts FIXTURES *Trade Mark)*

Fairfacts Fixtures

BUILT IN YOUR BATHROOM WALLS



"West Coast" Two-Fired Vitreous China Pedestal Lavatory, Closet and Tank

"West Coast" Plumbing Fixtures are made in California

Ideal climatic conditions, the finest of raw materials, and highly skilled workers combine to produce the unexcelled quality found in "West Coast" Two-fired Vitreous China Plumbing Fixtures.

Lifetime service is built into every closet bowl, tank and lavatory produced, and "West Coast" trimmings meet the highest standard for finish, fit and operating efficiency.

WEST COAST Porcelain Manufacturers

Wells Fargo Building, San Francisco

Plant, Millbrae, California

San Francisco
PUBLIC LIBRARY

The ARCHITECT & ENGINEER

NOVEMBER 1923

This Number—Recent San Francisco Office Buildings

Published in San Francisco
50 cents a copy - $2.50 a year

The Del Rey Lavatory

Pacific quality is the highest

PACIFIC

GUARANTEED QUALITY

TRADE MARK REGISTERED

PACIFIC

PLUMBING FIXTURES

PACIFIC SANITARY MANUFACTURING CO.
Main Office; 67 New Montgomery St., San Francisco
Factories: Richmond and San Pablo, California
Branches: Los Angeles, Portland, Seattle

W.A.C.

FLOATINE

will not soften, run, leak or slide

Free yourself from roof troubles *Specify* PABCO 10 and 20 Year Roofs which require the use *of*

FLOATINE

The PARAFFINE COMPANIES *Inc*

A $12,000,000 Corporation Operating 17 Plants on the Pacific Coast

San Diego Los Angeles San Francisco
Oakland Portland Seattle

High School Bldg.,
Watsonville, Cal.
W. H. Weeks, Architect

The One Finish
for Cement and Stucco

Bay State Brick and Cement Coating is the one ideal finish for stucco and cement. This coating beautifies a house and at the same time waterproofs it.

Dingy and leaden walls take on a new, artistic appearance. Weathered and drab concrete assumes a beauty that is striking. Bay State Brick and Cement Coating is not merely a surface paint. This master finish creeps into the pores of the walls and seals them against all dampness. The hardest rain cannot beat through a coating of Bay State.

Bay State Brick and Cement Coating comes in a complete range of colors and in a pure, rich white.

Send for samples and booklet today.

Wadsworth, Howland & Co., Inc.

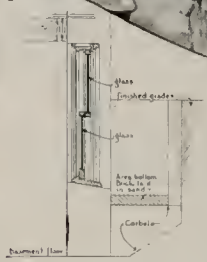
New York Boston Philadelphia

Graham Hambly & Son, 1333 East 7th St., Los Angeles, Cal.
James Hambly & Son, 229 Clay St., San Francisco, Cal.
Jones-Moore Paint House, San Diego, Cal.
McCracken-Ripley Bldg. Material Co., 45-4th St., Portland, Ore.
F. T. Crowe & Co., 508 West Lake Ave., Seattle, Wash.

THE BAY STATER

BAY STATE
Brick and Cement Coating

Sunlit Basements



RAISE the basement out of the depths and darkness by providing windows of generous size. Make the home perfect in this respect and in other ways by (specifying) an abundance of good glazing.

Then specify "the best glass"—that of the American Window Glass Co. It is best because it is made from unvaringly mixed batches, perfectly melted in the world's largest furnaces and of greater tensible strength, less wave and more luster by reason of improved methods of drawing and blowing. It is uniformly flat and of uniform thickness, acid washed before grading and then graded according to highest standards.

The contractor, the glazier, the frame manufacturer, the owner—all will thank you for specifying the glass of the American Window Glass Co. The elliptical mark on each box of the genuine means quality, the economy which goes with perfect packing and final results which can be obtained only by the use of "the best glass."

AMERICAN WINDOW GLASS CO. PITTSBURG, PA. U.S.A.

Suggested Specifications *for the* Best Window Glass

"All the clear window glass glazed in this building shall be the AMERICAN WINDOW GLASS COMPANY'S make, or equal thereto."

Identification Label—Each light of single strength or double strength "AA" or first quality window glass, as well as 16 oz. first and second quality Picture Glass of AMERICAN WINDOW GLASS COMPANY'S manufacture is labelled as shown herewith. This label identifies the quality.

"A" and "B" grades of Window Glass are not labelled, but have a quantity brand stamped on each original box.

AMERICAN WINDOW GLASS CO.

GENERAL OFFICES: PITTSBURGH, PA. BRANCHES IN PRINCIPAL CITIES

IN THREE MINUTES one man can install a complete Westinghouse Reflector-Socket Fixture.

This "easy-to-wire" feature has saved manufacturers many dollars in the installation of their industrial lighting equipment. It is one of the chief reasons for the wide popularity of Westinghouse Reflector-Socket Fixtures.

Westinghouse Interior Lighting Engineers will be pleased to show you how installation costs can be kept at a minimum and other benefits obtainable by the use of Westinghouse Reflector-Socket Fixtures.

For complete information, write to—

Westinghouse Electric & Manufacturing Company
George Cutter Works **South Bend, Ind.**
District Offices:
Denver Los Angeles San Francisco Seattle

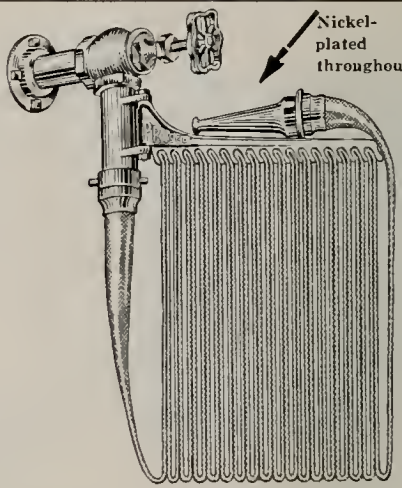
Westinghouse Reflector-Socket with Standard RLM Dome Reflector

Westinghouse

"Standard"

THIRTY-SIX years' experience manufacturing and installing Electric Time Keeping Systems. Helpful engineering data cheerfully furnished architects, engineers and school boards insuring satisfactory results, and a direct factory branch office completely equipped to render immediate service.

The Standard Electric Time Company
461 Market St., San Francisco, Cal.
Telephone Sutter 241



PRASCO PINLESS
SWINGING HOSE RACK
For 50, 75, 100 ft. Underwriters Unlined Linen Hose
No pins to break, bend, or jam
Hose pays off one loop after the other
Plant Rubber & Asbestos Works
537 Brannan St. San Francisco Tel. Sutter 2100

BIRCHFIELD
Reg U.S. Pat Off

Steel Heating Boilers have been installed in over 90 schools having come up to the best in material, workmanship, safety and

Economy

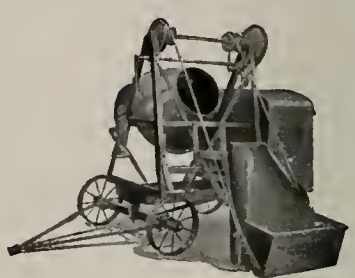
You will find BIRCHFIELDS in Oakland, San Francisco, Los Angeles, Pasadena, etc. We will be glad to give you the addresses, so you can verify the truth of all the statements you may have heard, regarding the savings BIRCHFIELDS make possible.

WALKER S. LELAND
660 Howard St. San Francisco

LARIMER & LAUER
1824 So. Hope St. Los Angeles

BIRCHFIELD BOILER CO.
Manufacturers, Tacoma, Wash.

JAEGER
CONCRETE MIXERS



"A MIX A MINUTE"

Not a mere slogan, but an everyday performance

Write or phone and we will mail you interesting Catalag

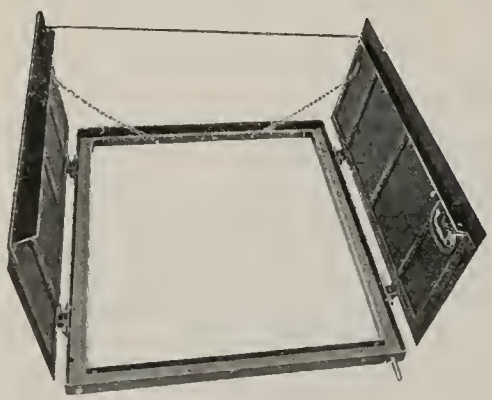
EDWARD R. BACON COMPANY
INCORPORATED
CONSTRUCTION ERBCo EQUIPMENT
FOLSOM at 17TH STS., SAN FRANCISCO
Los Angeles Sacramento Fresno

The Architect and Engineer—November, 1923—Vol. LXXV, No. 2. Published monthly—$2.50 a year. 627 Foxcroft Building, San Francisco, California. Entered as second-class matter, November 2, 1905, at the Post Office at San Francisco, California, under the act of March 3, 1879.

BERTRAM GOODHUE, distinguished New York architect, is quoted as saying that the three contributing factors to the success of building are Design, Texture and Color.

All of these are combined in *California Stucco,* as exemplified in the photograph above. Here we have clever design, beautiful texture and a three-tone harmonizing color, the whole a picture of unusual charm.

It is just one more example of the possibilities of *California Stucco* when properly applied. The house is in West Clay Park, San Francisco and was designed by Kenneth Mac Donald, architect. The work was executed under the direction of Patrick O'Brien, plastering contractor of San Francisco.



None Better

The "Waterproof" Sidewalk Door

Frame and gutter of steel—corners of frame solidly welded—hinges concealed and gripping the whole panel—flush with sidewalk—absolutely water tight

Specifications:

All sidewalk doors on this building to be of the "Waterproof" type, as manufactured by Michel & Pfeffer Iron Works, or equal

Michel & Pfeffer
Iron Works
HARRISON AND TENTH STREETS
SAN FRANCISCO CALIF.

Architects' Specification Index

(For Index to Advertisements, see next page)

ASBESTOS MATERIALS
- Johns-Manville Inc., of California, 500 Post street, San Francisco.
- Western Asbestos Magnesia Company, 25 South Park, San Francisco.
- Jones Bros. Asbestos Supply Co., Inc., 512 Second St., San Francisco.
- Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

ART METAL
- Federal Ornamental Iron and Bronze Co., 16th St., and San Bruno Ave., San Francisco.
- Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
- California Artistic Metal & Wire Co., 349 Seventh street, San Francisco.

ARCHITECTURAL TERRA COTTA
- Gladding, McBean & Company, Crocker Bldg., San Franrisco.
- Livermore Fire Brick Works, 604 Mission St., San Francisco.
- Tropico Potteries, Inc., Glendale, Cal.

BANK FIXTURES AND INTERIORS
- C. F. Weber & Co., 985 Market St., San Francisco.
- Home Mfg. Co., 543 Brannan St., San Francisco.
- Mullen Manufacturing Co., 64 Rausch St., San Francisco.
- Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.
- The Fink & Schindler Company, 218-13th St., San Francisco.

BANK SCREEN REFLECTORS
- I. P. Frink, Inc., 77 O'Farrell Street, San Francisco.

BATHROOM ACCESSORIES
- The Fairfacts Company, Inc., 234 W. 14th St., New York.

BEDS—WALL
- California Wall Bed Co., 714 Market St., San Francisco.
- Marshall & Stearns Co., Phelan Bldg., San Francisco.
- Leverett T. Spaulding, 1041 Mission St., San Francisco.

BELTING AND PACKING
- New York Belting and Packing Company, 519 Mission St., San Francisco.
- H. N. Cook Belting Co., 401 Howard St., San Francisco.
- Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

BLACKBOARDS
- C. F. Weber & Co., 985 Market St., San Francisco, Los Angeles and Reno, Nevada.
- Stewart Sales Co., 247 Rialto Building, San Francisco.
- Wentworth & Co., 539 Market Street, San Francisco.

BLINDS—VENETIAN AND DIFFUSELITE
- The J. G. Wilson Corporation, 621 North Broadway, Los Angeles.
- Western Blind & Screen Company, factory, Los Angeles; San Francisco representatives, Edward C. Dehn, Hearst Bldg., and C. F. Webber Co.

BOILERS
- Birchfield Boiler Company, Tacoma, Washington. See advertisement for Coast agencies.
- Kewanee Boiler Company, Factory Branch, Exposition Building, San Francisco.
- Kewonee Water Supply System, Simonds Machinery Co., 117 New Montgomery St., San Francisco.
- Main Iron Works, 1000 Sixteenth Street, San Francisco.

BONDS FOR CONTRACTORS
- Bonding Company of America, Kohl Bldg., San Francisco.
- Globe Indemnity Co., 444 California St., San Francisco.
- Fidelity & Casualty Co. of New York, Balfour Bldg., San Francisco.
- Standard Accident Insurance Company, California Commercial Union Building, San Francisco.

BOXBOARD FIBRE SHIPPING CASES
- The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

BRASS GOODS, CASTINGS, ETC.
- H. Mueller Manufacturing Co., 1072-76 Howard St., San Francisco.

BRICK FACE, COMMON, ENAMEL, GLAZED
- Remillard Brick Company, Phelan Building, San Francisco.
- Richmond Pressed Brick Co., Sharon Bldg., San Francisco. Plant at Richmond, Cal.
- Livermore Fire Brick Works and California Brick Co., 604 Mission St., San Francisco.
- United Materials Co., Sharon Bldg., San Francisco.
- Cannon & Co., Sacramento; and 77 O'Farrell St., San Francisco.

BRICK & CEMENT COATING
- Armorite and Concreta, manufactured by W. P. Fuller & Co., all principal Coast cities.
- Minwax Co., Inc., 22 Battery St., San Francisco and 653 S. Clarence St., Los Angeles.
- The Paraffine Companies, Inc., 475 Brannan St., San Francisco.
- R. N. Nason & Co., 151 Potrero Ave., San Francisco.
- Wadsworth, Howland & Co., Inc., Jas. Hambly & Son, 1333 E. 7th St., Los Angeles, and 229 Clay St., San Francisco.

BRICK STAINS
- Samuel Cabot Mfg. Co., Boston, Mass., agencies in San Francisco, Oakland, Los Angeles, Portland, Tacoma and Spokane.
- Armorite and Concreta, manufactured by W. P. Fuller & Co., all principal Coast cities.

BUILT-IN FIXTURES
- Built-In Fixture Company, San Pablo Ave., near Dwight Way, Berkeley, and Hoosier Store, Pacific Building, San Francisco.

BUILDERS' HARDWARE
- Joost Bros., agents for Russell & Erwin Hardware, 1053 Market St., San Francisco.
- The Stanley Works, New Britain, Conn., Coast sales offices, San Francisco, Los Angeles, and Seattle, Wash.
- Palace Hardware Company, Agents Corbin goods, 581 Market St., San Francisco.
- Richards-Wilcox Mfg. Co., Aurora; Ewing-Lewis Co., 626 Underwood Bldg., San Francisco.

BUILDING MATERIALS, SUPPLIES, ETC.
- Pacific Materials Co., Underwood Bldg., San Francisco.
- Waterhouse-Wilcox Co., 523 Market St., San Francisco.
- C. H. Jensen Co., Call Building, San Francisco.

RALSTON IRON WORKS, Inc.

ESTABLISHED 1876

Office and Works
20th and Indiana Streets
SAN FRANCISCO
Phone Mission 5230

Structural Steel

Representing
Pauly Jail Building Co.

An Index to the Advertisements

	Page
American Face Brick Ass'n.	131
American Marble & Mosaic Co.	48
American Rolling Mill Co.	43
American Window Glass Co.	2
Aristo Painting Co.	160
Atlas Heating & Ventilating Co.	150
Atlas Portland Cement Co.	129
Babcock Co., C. B.	48
Bacon, Edward R., Co.	4
Badt-Falk & Co.	149
Bartlett, John M.	145
Barrett & Hilp	148
Bass-Hueter Co.	33
Beckwith, Herbert	145
Beeco	159
Berkeley Electric Co.	158
Birchfield Boiler Co.	4
Bowser Co.	143
Browne - Langlais Electric Co.	158
Bonded Floor Co.	42
Bull Dog Floor Clip Co.	17
Bunting Iron Works	47
Butte Electric & Mfg. Co.	158
Buttonlath Mfg. Co.	121
Byron Jackson Pump Co.	140
Cabot, Samuel Co.	141
California Artistic Metal & Wire Co.	156
Cadwallader, Gibson Co.	132
California Pottery Co.	140
California Steam & Plumbing Supply Co.	163
California Stucco Products Co.	5
California Wall Bed Co.	136
Cannon Co.	34D
Carter Bloxonend Flooring Co.	40
Central Electric Co.	161
Central Iron Works	156
Clinton Construction Co.	154
Coast Rock and Gravel Co.	168
Cochran, W. L. Inc.	16
Cobbledick-Kibbe Glass Co.	161
Coleman, Alex	150
Columbia Marble Co.	142
Cook Belting Co.	46
Cotton & Co.	14
Cook Marble Co.	13
Crane Co.	152
Crittall Casement Window Co.	135
Cyclops Iron Works	154
Del Monte Properties Co.	136
Detroit Steel Products Co.	24
Dierrsen, Co., D.	24
Direct Line Telephone Co.	158
Dolan Wrecking Co.	160
Drendell Electric Co.	159
Elevator Supplies Co., Inc.	141
Ellery Arms Co.	161
Evans, W. L.	44
Fairfacts Fixtures	3rd Cover
Federal Ornamental Iron Works	156
Fidelity & Casualty Co.	161
Fink & Schindler	160
Fire Protection Corp.	161
Fire Protection Eng. Co.	154
Fire Retardent Products Co.	140
Flagg, Edwin H. Scenic Co.	146
Frink, I. P. Inc.	153
Fuller, W. P. & Co.	28
Garnett Young & Co.	14
General Fireproofing Co.	31
Gilley-Schmid Co.	144
Gladding, McBean & Co.	45
Globe Indemnity Co.	149
Golden Gate Iron Works	156
Grinnell Company of Calif.	154
Gunn, Carle Company	30
Haines, Jones & Cadbury Co.	139
Handy Self - Cleansing Flush Valve Co.	34
Hannah Bros.	146
Harvey Hubbell, Inc.	37
Hauser Window Co.	128
Haws Sanitary Drinking Faucet Co.	155
Hermann Safe Co.	10
Herrick Iron Works	156
Higgins Lumber Co.	47
Hillard, C. J.	142
Hill, Hubbell & Co.	134
Holbrook, Merrill & Stetson	32
Home Mfg. Co.	160
Hulting, Hurst & Hulting	154
Hunt & Co., Robert W.	134
Hunter & Hudson	144
Illinois Engineering Co.	154
Indiana Limestone Ass'n.	23
Ind. Automatic Spk'r Co.	10
Johnson, S. T.	47
Johns, Manville Co.	161
Johnson Service Co.	150
Jones Bros. Asbestos Co.	155
Joost Bros.	144
Judson Mfg. Co.	156
Kennedy, David E.	155
Kennedy Valve Co.	121
Kewanee Boiler Co.	127
Kinnear Mfg. Co.	29
Kissel, I. R.	146
Knowles, A.	148
Lannom Bros.	160
Larson-Siegrist Co., Inc.	145
Lawson & Drucker	150
Lawton & Vezey	146
Littlefield, R. W.	148
Lindgren & Swinerton, Inc.	40
Mac Gruer & Simpson	154
MacRorie-McLeran Co.	152
Main Iron Works	34
Magner Bros.	144
Mangrum & Otter	24
Marshall & Stearns	44
McCabe Hanger Mfg. Co.	26
McCray Refrigerator Co.	147
McLeran, R. Co.	149
McLaughlin, Jas. L.	160
McLaughlin Metal Works	138
Michel & Pfeffer Iron Works	6
Minwax Co., Inc.	147
Montague Range & Furnace Co.	151
Monson Bros.	146
Mortenson Construction Co.	156
Mott Company	159
Mueller, H., Mfg. Co.	159
Mullen Mfg. Co.	160
Musto Sons-Keenan Co.	13
Nason, R. N. & Co.	12
National Mill & Lumber Co.	32
National Steel Fabric Co.	124
National Terra Cotta Society	123
NePage, McKinney Co.	158
Newberry Electric Co.	158
Newman, H. G.	150
New York Belting Co.	163
Nordstrom, David	148
Oak Flooring Bureau	19
Oakley Paint Mfg. Co.	147
Ocean Shore Iron Works	157
Old Mission Portland Cement	35
Otis Elevator Company	168
Pacific Coast Steel Co.	157
Pacific Elevator Co.	24
Pacific Fire Extinguisher Co.	18
Pacific Foundry Co.	153
Pacific Gas & Electric Co.	20
Pacific Mfg. Co.	145
Pacific Materials Co.	36
Pacific Plumbing Fixture Co.	2nd Cover
Pacific Rolling Mills	22
Pacific Portland Cement Co., Consolidated	36
Palace Hardware Co.	36
Palm Iron Works	22
Paraffine Companies	1-39
Parker, K. E. Co.	148
Peerless Built-In Fixture Co.	133
Pelton Water Wheel Co.	11
Peters Construction Co.	146
Peterson, Carl H.	149
Petrium Sanitary Sink Co.	157
Phillips, Chas. T. Co.	154
Picard, W. H.	150
Pittsburgh Water Heater Co.	144
Pope & Talbot	151
Plant Rubber & Asbestos Works	4
Potter Radiator Co.	34
Portland Cement Ass'n.	137
Quandt, A. & Sons	9
Ralston Iron Works	7
Randall Control Corp.	144
Ray Mfg. Co.	46
Raymond Granite Co.	25
Richards-Wilcox Mfg. Co.	138
Richmond Brick Co.	34A
Remillard Brick Co.	161
Roberts Mfg. Co.	153
Robertson Co., H. H.	40
Rotary Oil Burner Company	47
Rumhf, H.	128
Ruud Heater Co.	144
Sandusky Cement Co.	125
Santa Fe Lumber Co.	151
Scott Company	145
Schrader Iron Works	156
Simmons, O. M., Co.	12
Simmonds Machinery Co.	34
Sloane, W. & J.	17
Smith & Egge	132
Sommer, I. M.	148
Soule, Edw. L. Co.	132
Spencer Elevator Co.	149
S. & S. Tile Co.	154
Standard Electric Time Co.	4
Standard Fence Co.	149
Standard Varnish Works	9
Stanley Works	155
Steelform Contracting Co.	148
Stewart Sales Co.	155
St. John, Robert L.	16
Strable Hardwood Co.	38, 152
Sunset Lumber Co.	151
Tittle, H. S.	158
Toledo Scale Co.	11
Tompkins-Kiel Marble Co.	41
Tormey Co.	144
Tropico Potteries, Inc.	140
Trost, Robert	146
Truscon Steel Co.	30
United Alloy Steel Corp.	161
United Materials Co.	34A
U. S. Metal Products Co.	27
Universal Sales Co.	29
Van Emon Elevator Co.	145
Van Fleet-Freear Co.	20
Vogt, Alfred	146
Vonnegut Hardware Co.	15
Vermont Marble Co.	142
Vukicevich & Bagge	148
Wadsworth, Howland & Co.	2
Wayne Tank and Pump Co.	34B & C
Walter, D. N. & E. Co.	142
Weber, C. F. Co.	152
Wells, A. F.	145
Wesix Electric Heater	18
West Coast Porcelain Co.	Back Cover
Western Asbestos & Magnesia Co.	22
Western Blind & Screen Co.	21
Western States Seating Co.	145
Western Iron Works	22
Westinghouse Mfg. Co.	3
White Bros.	126
Wickwire Spencer Steel Corp.	40
Williams Radiator Co.	147
Wilson, J. G., Corp.	26
Wilson, W. F. Co.	150
Witt, G. E.	48
Zelinsky, D. & Co.	149

A. Quandt & Sons

OUR WORK IS THE BEST GUARANTEE OF THE QUALITY OF OUR SERVICE

Painters - Decorators

374 GUERRERO ST. **San Francisco** — SINCE 1885 — 3319 CENTRAL AVE. **Los Angeles**

ARCHITECTS' SPECIFICATION INDEX—Continued

The General Fireproofing Company, 20 Beale Street, San Francisco

BUILDING PAPER
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

BUILDING TILE (Burned Clay)
California Brick Co., 604 Mission St., San Francisco.

CABINET MAKERS
Fink & Schindler Company, 218 13th St., San Francisco.
Home Manufacturing Company, 543 Brannan St., San Francisco.
Mullen Manufacturing Company, 64 Rausch St., San Francisco.
Lannom Bros. Mfg. Co., 5th and Magnolia Sts., Oakland.
Pacific Mfg. Co., San Francisco, Los Angeles and Oakland.

CEMENT
Atlas Portland Cement Co., agencies in all principal Coast cities.
Old Mission Portland Cement Co., Mills Bldg., San Francisco.
Medusa Stainless White Cement, plain and waterproofed, carried in stock and sold by leading building supply dealers in California, Oregon and Washington.
The Paraffine Companies, San Francisco, and principal Coast Cities.
Pacific Portland Cement Co., Pacific Building, San Francisco; Portland, San Jose and Los Angeles.

CEMENT EXTERIOR WATERPROOF PAINT
Armorite, sold by W. P. Fuller & Co., all principal Coast cities.
Minwax Co., Inc., 22 Batery St., San Francisco and 653 S. Clarence St., Los Angeles.
The General Fireproofing Company, 20 Beale Street, San Francisco
Bay State Brick and Cement Coating, sold by James Hambly, 229-233 Clay St., San Francisco.

CEMENT STUCCO
"California" sold by California Stucco Products Company, Holbrook building, San Francisco.

CEMENT TESTS—CHEMICAL ENGINEERS
Robert W. Hunt & Co., 251 Kearny St., San Francisco.

CLAY PRODUCTS
California Brick Co. and Livermore Fire Brick Works, 604 Mission St., San Francisco.
Cannon & Co., Sacramento, Cal.
Gladding, McBean & Co., Crocker Bldg., San Francisco.
Los Angeles Pressed Brick Co., Frost Bldg., Los Angeles.
Tropico Potteries, Inc., Glendale, Cal.
United Materials Co., Sharon Bldg., San Francisco.

CLOCKS—ELECTRIC TIME
Standard Electric Time Co., 461 Market St., San Francisco.
Pacific Electric Clock Company, 86 Third St., San Francisco.

COLD STORAGE PLANTS
Cyclops Iron Works, 837 Folsom St., San Francisco.

COMPOSITION FLOORS
"Linotol" plastic flooring, Hill, Hubbell & Co., 115 Davis St., San Francisco; 410 San Fernando Bldg., Los Angeles.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.
Hoff Magnesite Co., San Francisco. Miller & Alf, 337 Monadnock Bldg., San Francisco, general agents.

CONCRETE OR CEMENT HARDENER
Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
The General Fireproofing Company, 20 Beale Street, San Francisco

CONCRETE MIXERS
Foote and Jaeger mixers sold by Edward R. Bacon Co., 51 Minna St., San Francisco, also Los Angeles.

CONCRETE REINFORCEMENT
Edw. L. Soule Co., Rialto Bldg., San Francisco.
Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
Clinton Welded Wire Fabric, Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.
Judson Mfg. Co., 817-821 Folsom St., San Francisco.
Pacific Coast Steel Company, Rialto Bldg., San Francisco.
Triangle Mesh Fabric. Sales agents, Pacific Materials Co., 525 Market St., San Francisco.
Truscon Steel Co., 709 Mission St., San Francisco.
Badt-Falk Co., Call-Post Bldg., San Francisco.

CONDUITS
"Sherarduct," Garnett Young & Company, 612 Howard St., San Francisco.

CONTRACTORS, GENERAL
Barrett & Hilp, 918 Harrison St., San Francisco.
Herbert Beckwith, Everson Bldg., Oakland.
Larsen-Siegrist Co., Inc., 807 Claus Spreckels Bldg., San Francisco.
Lindgren-Swinerton, Inc., Standard Oil Building, San Francisco
R. W. Littlefield, 357-12th St., Oakland.
K. E. Parker Co., Inc., Clunie Bldg., San Francisco.
Dinwiddie Construction Co., Crocker Bldg., San Francisco.
John M. Bartlett, 357 Twelfth St., Oakland.
Clinton Construction Company, 923 Folsom St., San Francisco.
Monson Bros., 251 Kearny St., San Francisco.
Geo. Wagner, 251 Kearny St., San Francisco.
T. B. Goodwin, 180 Jessie St., San Francisco..
McLeran & Co., R., Hearst Bldg., San Francisco.
Vukicevich & Bagge, 815 Bryant St., San Francisco.
Peters Construction Company, 705 Atlas Building, San Francisco, and Builders' Exchange, Oakland.

SATINETTE WHITE ENAMEL

FLATTINE CABINET FINISH
ELASTICA INTERIOR AND ELASTICA EXTERIOR

Standard Varnish Works

55 STEVENSON STREET — SAN FRANCISCO

THE HERMANN SAFE CO.

Manufacturers of Fire and Burglar Proof Safes, Vaults and Safe Deposit Boxes

Also Representatives for the

YORK SAFE & LOCK CO. OF YORK, PA.

216-224 Fremont Street San Francisco, Cal.

ARCHITECTS' SPECIFICATION INDEX—Continued

Robert Troat, 26th and Howard Sts., San Francisco.
I. M. Sommer, 401 Balboa Bldg., San Francisco.
Jas. L. McLaughlin, 251 Kearny St., San Francisco.
Alfred H. Vogt, 185 Stevenson St., San Francisco.
Lange and Bergstrom, Sharon Bldg., San Francisco and Washington Bldg., Los Angeles.
David Nofdstrom, 4146 Emerald Street, Oakland.
Carl T. Peterson, 185 Stevenson St., San Francisco.

CONTRACTORS' EQUIPMENT
Edward R. Bacon Co., Folsom at 17th St., San Francisco, and Los Angeles.

CONVENIENCE OUTLETS
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St.

CORK TILE
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.
David E. Kennedy, Sharon building, San Francisco, and Story building, Los Angeles.

CORK TILE FOR FLOORS
Bonded Floors Company, 370 Second St., San Francisco; 263 So. Los Angeles, St., Los Angeles.
David E. Kennedy, Sharon Building, San Francisco, Story Building, Los Angeles.

CRUSHED ROCK
Coast Rock & Gravel Co., Call-Post Bldg., San Francisco.

CURTAINS—STEEL, ROLLING, FIREPROOF
J. G. Wilson Corp., 621 N. Broadway, Los Angeles.

DAMP-PROOFING AND WATERPROOFING
Armorite Damp Resisting Paint, made by W. P. Fuller & Co., San Francisco.
"Imperial," manufactured by Brooks & Doerr, Merchants National Bank Building, San Francisco.
Minwax Co., Inc., 22 Battery St., San Francisco, and 653 S. Clarence St., Los Angeles.
Samuel Cabot Co., Boston; repreaented in San Francisco by Pacific Materials Co., Underwood Bldg., San Francisco.
"Pabco" Damp-Proofing Compound, sold by the Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.
The General Fireproofing Company, 20 Beale Street, San Francisco

DOOR HANGERS
McCabe Door Hanger Company, leading hardware stores.
Pitcher Hanger, sold by National Mill & Lumber Co., 326 Market St., San Francisco.
Richard-Wilcox Mfg. Co., the Ewing-Lewis Co., 626 Underwood Building, San Francisco.
Stanley Works, New Britain, Conn., Monadnock Bldg., San Francisco.

DOORS—VANISHING
W. L. Evans, 700 Block B., Washington, Ind.

DRAIN PIPE AND FITTINGS
"Corrosiron" Acid Proof, manufactured by Pacific Foundry Co., Harrison and 18th Sts., San Francisco.

DRINKING FOUNTAINS
Hawa Sanitary Drinking Faucet Co., 1808 Harmon St., Berkeley, and C. F. Weber & Co., San Francisco and Los Angeles.
Crane Company, San Francisco, Oakland, and Los Angeles.
Pacific Porcelain Ware Co., 67 New Montgomery St., San Francisco.
Haines, Jones & Cadbury Co., 857 Folsom St., San Francisco.

DUMB WAITERS
Spencer Elevator Company, 166-7th St., San Francisco.
San Francisco Elevator Company, Inc., 860 Folsom St., San Francisco.
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.

ELECTRICAL CONTRACTORS
Butte Electrical Equipment Company, 530 Folsom St., San Francisco.
Butte Electric & Manufacturing Co., 956 Folsom St., San Francisco.
Central Electric Company, 177-79 Minna St., San Francisco
NePage, McKenny Co., 589 Howard St., San Francisco.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.
H. S. Tittle, 85 Columbia Square, San Francisco
Brown-Langlais Electrical Construction Co., 315 Fifth Street, San Francisco.
A. F. Wells Company, 155 Second St., San Francisco.
Newberry Electric Company, Alta Bldg., San Francisco

ELECTRIC PLATE WARMER
The Prometheus Electric Plate Warmer for residences, clubs, hotels, etc. Sold by M. E. Hammond, Pacific Bldg., San Francisco.

ELECTRICAL SUPPLIES AND EQUIPMENT
"H. & H. Switches," Garnett Young & Co., 612 Howard St., San Francisco.
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St.
Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco.

ELECTRIC SAFETY INTERLOCKS
Richards-Wilcox Mfg. Co., 525 Market St., San Francisco.

ELECTRIC HEATING
Wesix Electric Heaters, manufactured by W. Wesley Hicks, Rialto Building, San Francisco.

ELEVATORS—PASSENGER and FREIGHT
Pacific Elevator & Equipment Co., 1129 Howard Street, San Francisco.
Otis Elevator Company, Stockton and North Point, San Francisco.
Spencer Elevator Company, 166-7th St., San Francisco.
San Francisco Elevator Co., 860 Folsom St., San Francisco.

Metropolitan 4597 S. F. Phone, Garfield 204

Independent Automatic Sprinkler Company

Fire Protection Engineers

O. T. Johnson Building, Los Angeles 72 Natoma Street, San Francisco

TOLEDO AUTOMATIC SPRINGLESS SCALES
12 OUNCES TO 20 TONS
for Factories, Warehouses, Wholesale Houses—in fact any kind of business where accurate weight is desired
676 MISSION ST. Phone Sutter 250 TOLEDO SCALE CO. SAN FRANCISCO California

ARCHITECTS' SPECIFICATION INDEX—Continued

Van Emon Elevator Company, 1159 Howard St., San Francisco.

ELEVATOR MOTORS AND CONTROL
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., and First National Bank Bldg., San Francisco, Calif.

ELEVATOR SIGNALS, DOOR EQUIPMENT, ETC.
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.
Randall Control & Hydrometric Corporation, 265A Minna St., San Francisco, and 523 Central Bldg., Los Angeles.
Richards-Wilcox Mfg. Co., 525 Market St., San Francisco.

ENGINEERS — CONSULTING, ELECTRICAL, MECHANICAL
Hunter & Hudson, Rialto Bldg., San Francisco.
Robert L. St. John, 1011 Flat Iron Bldg., San Francisco
Charles T. Phillips Company, Bank of Italy Bldg., San Francisco, and Roberts Bldg., Los Angeles.

FAIENCE TILE
Tropico Potteries, Inc., Glendale, Cal.

FELTS
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FENCES—WIRE AND IRON
Standard Fence Company, 432 Bryant, San Francisco and 60th and Lowell Sts., Oakland.

FIRE BRICK, TILE & CLAY
Livermore Fire Brick Works, 604 Mission St., San Francisco.

FIRE EXIT LATCHES
Vonnegut Hardware Co., Indianapolis, Ind., represented in San Francisco by Abeel Jensen Co., Call Building.

FIRE ESCAPES
Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
Western Iron Works, 141 Beale St., San Francisco.

FIRE HOSE RACKS
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

FIRE-PROOF DOORS
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
U. S. Metal Products Co., 330-10th St., San Francisco.
Kinnear Mfg. Co., represented in San Francisco by Pacific Materials Co., Underwood Bldg.
The J. G. Wilson Corporation, 621 North Broadway, Los Angeles.

FIRE SPRINKLERS—AUTOMATIC
Fire Protection Engineering Co., 67 Main St., San Francisco.
Grinnell Company of the Pacific, 453 Mission St., San Francisco.
Independent Automatic Sprinkler Co., 72 Natoma St., San Francisco.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.

FIRE RETARDING PAINT
The Paraffine Companies, Inc., 34 First St., San Francisco.
Fire Retardent Products Co., 2838 Hannah St., Oakland, Cal.

FIXTURES—BANK, OFFICE, STORE, ETC.
Home Manufacturing Company, 543 Brannan St., San Francisco.
The Fink & Schindler Company, 218-13th St., San Francisco.
Mullen Manufacturing Co., 64 Rausch St., San Francisco.
C. F. Weber & Co., 985 Market St., San Francisco, and 210 N. Main St., Los Angeles, Cal.

FLOORS, BLOCK
Carter, Bloxonend Flooring Co., Kansas, Mo., represented on Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

FLOOR CLIPS
Bull Dog Floor Clip Sales Co., 77 O'Farrell St., San Francisco, and 600 Metropolitan Bldg., Los Angeles.

FLOORING, HEAVY DUTY
Carter, Bloxonend Flooring Co., Kansas, Mo., represented on Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

FLOORS—TILE, CORK, ETC.
Mangrum & Otter, 827 Mission St., San Francisco.

FLOOR VARNISH
Bass-Hueter and San Francisco Pioneer Varnish Works, 816 Mission St., San Francisco.
Fifteen for Floors, made by W. P. Fuller & Co., San Francisco.
Standard Varnish Works, Chicago, New York and San Francisco.
R. N. Nason & Co., San Francisco and Los Angeles.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FLOORS—HARDWOOD
Oak Flooring Bureau, Ashland Block, Chicago, Ill.
Cadwallader, Gibson Co., 5th & Brannan St., San Francisco.
Parrott & Co., 320 California St., San Francisco.
Strable Hardwood Company, 511 First St., Oakland.
E. L. Bruce Co., Manufacturers, Memphis, Tenn.
White Bros., 5th and Brannan Sts., San Francisco.

FLOOR TREATMENT—HARDWOOD, COMPOSITION AND CONCRETE
Minwax Co., Inc., 22 Battery St., San Francisco and 653 S. Clarence St., Los Angeles.

FLOORS—MASTIC—FLOOR COVERING
Hill, Hubbell & Company, 115 Davis St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FLUE LINING
California Brick Company, 604 Mission St., San Francisco.

THE PELTON WATER WHEEL CO.
Hydraulic Engineers
Light-Duty High-Head Pumps for Tank and Other Building Service
Heavy-Duty Pumps for Municipal and General Water Supply
2022 Harrison Street San Francisco

NASON'S OPAQUE FLAT FINISH A VALUABLE OIL PAINT FOR WALLS, CEILINGS, ETC.
Made in California to stand Pacific Coast climatic conditions
R. N. Nason & Co., Paint Makers
PORTLAND 151 Potrero Ave.—SAN FRANCISCO—436 Market St. SEATTLE

ARCHITECTS' SPECIFICATION INDEX—Continued

FLUSH VALVES
Handy Self-Cleaning Flush Valve Co., 731 Folsom St., San Francisco.

FUEL OIL SYSTEMS
S. T. Johnson Co., 1337 Mission St., San Francisco.
S. F. Bowser & Co. Inc., 612 Howard St., San Francisco.
Wayne Tank and Oil Co., 430 Fourth St., San Francisco.

FURNACES—WARM AIR
Mangrum & Otter, 827 Mission St., San Francisco.
Montague Range and Furnace Co., 826 Mission St., San Francisco.
C. B. Babcock Company, 768 Mission St., San Francisco.

FURNITURE—OFFICE, SCHOOL, CHURCH.
Home Manufacturing Company, 543 Brannan St., San Francisco.
C. F. Weber & Co., Second and Mission Sts., San Francisco.
W. & J. Sloane, 216 Sutter St., San Francisco.
Western States Seating Co., 39 Second St., San Francisco.
H. Rumph, 567 Howard St., San Francisco.
Fink & Schindler Company, 218-19th St., San Francisco.

FURRING TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

GARAGE HARDWARE
The Stanley Works, New Britain, Conn., Coast sale offices, San Francisco, Los Angeles and Seattle, Wash.
Richards-Wilcox Mfg. Co., 525 Market St., San Francisco.

GAS HEATING
Pittsburg Water Heater Company, 478 Sutter St., San Francisco.
Ruud Automatic Water Heater, sold by Ruud Heater Company, 431 Sutter St., San Francisco.
C. B. Babcock Company, representing General Gas Light Company, 768 Mission St., San Francisco.

GLASS
American Window Glass Co., represented by L. H. Butcher Co., 862 Mission St., San Francisco.
Cobbledick-Kibbe Glass Co., 666 Howard St., San Francisco.
Fuller & Goepp, 32 Page St., San Francisco, and Jackson, at Eleventh St., Oakland.
W. P. Fuller & Company, all principal Coast cities.

GRADING, WRECKING, ETC.
Dolan Wrecking & Construction Co., 1607 Market St., San Francisco.

GRANITE
Raymond Granite Co., Potrero Ave., and Division St., San Francisco.

GRAVEL AND SAND
Coast Rock & Gravel Co., Call-Post Bldg., San Francisco.
Del Monte White Sand, sold by Del Monte Properties Co., Crocker Bldg., San Francisco.

GYMNASIUM EQUIPMENT—LOCKERS, ETC.
Ellery Arms Co., 583 Market St., San Francisco.

HARDWALL PLASTER
"Empire," manufactured by Pacific Portland Cement Co., Pacific Building, San Francisco; Portland, San Jose and Los Angeles.

HARDWARE
Joost Bros., agents for Russell & Erwin Hardware, 1053 Market St., San Francisco.
The Stanley Works, New Britain, Conn.; Coast sales offices, San Francisco, Los Angeles, and Seattle, Wash.
Corbin hardware, sold by Palace Hardware Co., 581 Market St., San Francisco.
Vonnegut hardware, sold by Abeel-Jensen Co. Call Bldg., San Francisco.
Richards-Wilcox Mfg. Co., Aurora, Ill.; Ewing-Lewis Co., 626 Underwood Building, San Francisco.

HARDWOODS
White Brothers, 5th and Brannan Streets, San Francisco.

HEATING AND VENTILATING CONTRACTORS
Atlas Heating and Ventilating Company, Inc., Fourth and Freelon Sts., San Francisco.
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St., San Francisco.
Hateley & Hateley, Mitau Bldg., Sacramento.
Mangrum & Otter, 827-831 Mission St., San Francisco.
Lawson & Drucker, 450 Hayes St., San Francisco.
Carl T. Doell, 467 21st St., Oakland.
Lupen and Hawley, 906 7th St., Sacramento.
William F. Wilson Co., 328 Mason St., San Francisco.
W. H. Picard, 5656 College Ave., Oakland.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.
Scott Company, 243 Minna St., San Francisco.
H. G. Newman Co., 2004 Telegraph Ave., Oakland.

HEATING & VENTILATING EQUIPMENT
W. S. Haines & Co.'s steam specialties. O. M. Simmons Company, 115 Mission St., San Francisco.
Hulting, Hurst & Hulting, representing Jas. P. Marsh Co., Monadnock Bldg., San Francisco.
Illinois Engineering Co., 417 Market St., San Francisco.
Williams Radiator Company, 571 Mission St., San Francisco.

HEATERS, GAS GRATES, RADIATORS, ETC.
General Gas Light Company, 768 Mission St., San Francisco.
Ra-Do Fumeless Gas Radiators, Potter Radiator Corporation, 478 Sutter St., San Francisco
Humphrey Radiantfire, sold by Rudd Heater Company, 431 Sutter St., San Francisco.
Williams Radiator Company, "Gas Steam Radiators," 571 Mission St., San Francisco.
McLaughlin Metal Works, 223 J St., Sacramento.

W. S. Haines & Co., Steam Specialties, Vacuum and Vapor Systems of Heating
"Twenty-four years of satisfactory service."
(See Page 1503 of Sweet's Catalogue)
O. M. SIMMONS CO. 115 Mission St., San Francisco
Phone: Douglas 5497

Clarence E. Musto, Pres. Joseph B. Keenan, Vice-Pres. Guido J. Musto, Sec'y & Treas.

JOSEPH MUSTO SONS--KEENAN CO.

Phone Franklin —6365— MARBLE Office and Mills: 535-565 North Point St., SAN FRANCISCO, CAL.

ARCHITECTS' SPECIFICATION INDEX—Continued

HOLLOW BUILDING TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.
HOLLOW TILE BLOCKS
Cannon & Co., plant at Sacramento; 77 O'Farrell St., San Francisco.
California Brick Company, 604 Mission St., San Francisco.
Gladding, McBean & Co., San Francisco, Los Angeles, Oakland and Sacramento.
HOSE—UNDERWRITERS UNLINED LINEN—RUBBER
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.
HOSPITAL FIXTURES
Mott Company of California, 553 Mission St., San Francisco.
HOSPITAL SIGNAL SYSTEMS
Chicago Signal Co., represented by Garnett Young & Co., 612 Howard St., San Francisco.
ICE MAKING MACHINERY
Cyclops Iron Works, 837 Folsom St., San Francisco.
"Frigedaire," Sold by W. L. Cochran, 880 Mission St., San Francisco.
INCINERATORS
The Incinerite, sold by M. E. Hammond, Mezzanine, Pacific Building, San Francisco.
INDUSTRIAL LIGHTING EQUIPMENT
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.
INGOT IRON
"Armco" brand, manufactured by American Rolling Mill Company, Middletown, Ohio, and 10th and Bryant Sts., San Francisco.
INSPECTIONS AND TESTS
Robert W. Hunt & Co., 251 Kearny St., San Francisco.
INSULATION
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.
JAIL EQUIPMENT
Ralston Iron Works, 20th and Indiana Sts., San Francisco.
LAMP POSTS, ELECTROLIERS, ETC.
J. L. Mott Iron Works, 553 Mission St., San Francisco.
LANDSCAPE ARCHITECT
Emerson Knight, 704 Market St., San Francisco.
Cotton & Co., Call Building, San Francisco.
LANDSCAPE GARDENERS
MacRorie-McLaren Co., 514-516 Phelan Bldg., San Francisco.
LATHING AND PLASTERING
MacGruer & Simpson, 226 Tehama St., San Francisco.
A. Knowles, Call-Post Bldg., San Francisco.
LATHING MATERIAL—WIRE, METAL, ETC.
Buttonloth Manufacturing Co., Los Angeles and 207 Balboa Bldg., San Francisco.
Pacific Materials Co., 525 Market St., San Francisco.
The General Fireproofing Company, 20 Beale Street, San Francisco
Truscon Steel Co., 709 Mission Street, San Francisco.
Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.
LIGHT, HEAT AND POWER
Great Western Power Company, Stockton St., near Sutter, San Francisco.
Pacific Gas & Electric Co., Sutter St., San Francisco.
LIGHTING FIXTURES
Benjamin Electric Mfg. Co., New York, Chicago, 580 Howard St., San Francisco.
D. Dierssen Co., 20 Second Street, San Francisco. Distributors Solar-Lite fixtures.
Roberts Mfg. Co., 663 Mission St., San Francisco.
LIMESTONE, INDIANA
Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana.
LINOLEUM
D. N. & E. Walter & Co., 562 Mission St., San Francisco.
The Paraffine Companies, factory in Oakland; office, 34 First St., near Market, San Francisco.
W. & J. Sloane, 216 Sutter St., San Francisco.
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.
Bonded Floors Company, 370 Second St., San Francisco; 263 So. Los Angeles St., Los Angeles.
LINOTILE
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.
LUMBER
Hart-Wood Lumber Co., Fifth and Berry Sts., San Francisco.
Pacific Manufacturing Company, San Francisco, Oakland, Los Angeles and Santa Clara.
Pope & Talbot, foot of Third St., San Francisco.
Santa Fe Lumber Co., 16 California St., San Francisco.
Sunset Lumber Company, First and Oak Sts., Oakland.
White Bros., 5th and Brannan Sts., San Francisco.
MANTELS—WOOD, TILE, ETC.
Mangrum & Otter, 827-831 Mission St., San Francisco.
MARBLE
American Marble and Mosaic Co., 25 Columbus Square, San Francisco.
Ray Cook Marble Company, foot of Powell St., Oakland.
Joseph Musto Sons, Keenan Co., 535 N. Point St., San Francisco.
Vermont Marble Co., Coast branches, San Francisco, Portland and Tacoma.

RAY COOK MARBLE CO.
IMPORTED AND DOMESTIC MARBLES
For Building Construction
Factory and Office, foot of Powell St., Oakland Phone Piedmont 1009

Cotton & Company
LANDSCAPE ARCHITECTS AND ENGINEERS
74 NEW MONTGOMERY STREET, SAN FRANCISCO
Telephone Douglas 5541

ARCHITECTS' SPECIFICATION INDEX—Continued

Tompkins-Kiel Marble Company, 505 Fifth Ave., New York; also Chicago, Philadelphia and San Francisco.
Columbia Marble Co., 413 Rialto Bldg., San Francisco.

METAL DOORS AND WINDOWS
Waterhoose-Wilcox Co., Inc., 523 Market St., San Francisco.
U. S. Metal Products Co., 330 Tenth St., San Francisco.

METAL FURNITURE
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

METAL STORE FRONTS
Cobbledick-Kibbe Glass Company, 666-8 Howard street, San Francisco, and Washington at Third St., Oakland.

MILL WORK
Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.
National Mill and Lumber Co., San Francisco and Oakland.
Lannom Bros. Mfg. Co., 5th and Magnolia Sts., Oakland.
The Fink & Schindler Company, 218-13th St., San Francisco.

OIL BURNERS
Bunting Iron Works, 1215 First Nat. Bank Bldg., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
G. E. Witt Co., 862 Howard St., San Francisco.
W. S. Ray Mfg. Company, Rialto Bldg., San Francisco, and 2206 San Pablo Ave., Oakland.
Rotary Oil Burner Company, 159 Twelfth St., Oakland.

OIL STORAGE AND DISTRIBUTING STATIONS
S. F. Bowser & Co., Inc., 612 Howard St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
Wayne Oil Tank & Pump Co., 430 Fourth St., San Francisco; 830 S. Los Angeles St., Los Angeles.

ORNAMENTAL IRON AND BRONZE
California Artistic Metal and Wire Co., 349 Seventh St., San Francisco.
Federal Ornamental Iron and Bronze Co., 16th St., and San Bruno Ave., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
C. J. Hillard Company, Inc., 19th and Minnesota Sts., San Francisco.
Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.

PANIC DOORS
Vonnegut hardware, sold by Abeel-Jensen Co. Call Bldg., San Francisco.

PAINT FOR CEMENT AND STUCCO
Wadsworth, Howland & Co., Inc., Jas. Hambly & Son, 1333 E. 7th St., Los Angeles, and 229 Clay St., San Francisco.

PAINT FOR STEEL STRUCTURES, BRIDGES, ETC.
The Paraffine Companies, Inc., 34 First St., San Francisco.
Premier Graphite Paint and Pioneer Brand Red Lead, made by W. P. Fuller & Co., San Francisco.
Hill, Hubbell & Company, 115 Davis St., San Francisco.

PAINTING, TINTING, ETC.
I. R. Kissel, 1747 Sacramento St., San Francisco.
D. Zelinsky & Sons, San Francisco and Los Angeles.
The Tormey Co., 681 Geary St., San Francisco.
A. Quandt & Son, 374 Guerrero St., San Francisco.
Artistic Painting Company, 39 Tehama St., San Francisco.

PAINTS, OILS, ETC.
Magner Bros., 414-424 Ninth St., San Francisco.
Bass-Hueter Paint Co., Mission, near Fourth St., San Francisco and all principal Coast cities.
R. N. Nason & Company, San Francisco, Los Angeles, Portland and Seattle.
W. P. Fuller & Co., all principal Coast cities.
Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Fire Retardent Products Co., 2838 Hannah St., Oakland, Cal.
Oakley Paint Manufacturing Company, 727 Antonia St., Los Angeles, and Hearst Building, San Francisco.

PARTITIONS—FOLDING AND ROLLING
J. G. Wilson Corporation, 621 N. Broadway, Los Angeles; Waterhouse-Wilcox Co., Underwood Bldg., San Farncisco.

PARTITION TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

PLASTERING CONTRACTORS
A. Knowles, Call Bldg., San Francisco.
MacGruer & Simpson, 266 Tehama St., San Francisco.

PLASTER REINFORCEMENT
National Steel Fabric Co., A. C. Rulofson Co., Pacific Coast Sales Manager, Monadnock Building, San Francisco.

PLUMBING CONTRACTORS
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St., San Francisco.
Hateley & Hateley, Mitau Bldg., Sacramento.
Scott Co., Inc., 243 Minna St., San Francisco.
Wm. F. Wilson Co., 328 Mason St., San Francisco.
Luppen, Hawley & Thing, 906 7th St., Sacramento.

SILENT CALL **Chicago HOSPITAL** SIGNAL SYSTEMS
GARNETT YOUNG AND COMPANY
Pacific Coast Sales Engineers
612 Howard St., San Francisco
Seattle Los Angeles Portland

Von Duprin

Self-Releasing Fire Exit Latches

Specify—
Von Duprin
Self - Releasing Fire Exit Latches, as approved by the Underwriters' Laboratories (Inc.) of the National Board of Fire Underwriters.
Report No. S. A. 1637. Guide No. 100-F 24.

On Reliability

Reliability is the heart and soul of any device designed for the protection of human life.

Especially is this true when the device is to be used under emergency conditions.

It costs more to make **Von Duprin** latches so sturdy, so safe, so reliable that they will stand up under any strain they are called upon to bear in time of panic.

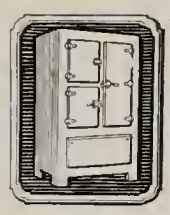
But—remove this extra strength, this reliability, and nothing worth while remains. A slight saving in the cost—if responsible for the loss of human life—would be frightfully expensive economy.

It is very important, we believe, to remember that **Von Duprin** latches are so well made that not one, anywhere, has ever failed to operate in an emergency.

See "Sweet's," pages 1415-1419, or ask us for Catalog 12-L.

VONNEGUT HARDWARE CO.
Indianapolis, Ind.

Academy High School, Erie, Pennsylvania
Wm. B. Ittner, St. Louis Architect



Frigidaire

The Electric Refrigerator for Home, Apartment, Store, Etc.

Made By DELCO-LIGHT COMPANY, Dayton, Ohio
W. L. COCHRAN, INC., Distributor, 880 Mission St., San Francisco

ARCHITECTS' SPECIFICATION INDEX—Continued

W. H. Picard, 5656 College Ave., Oakland.
H. G. Newman Company, 2004 Telegraph Ave., Oakland.

PLUMBING SUPPLY HOUSES
Crane Company, all principal coast cities.
Haines, Jones & Cadbury Co., 857 Folsom St., San Francisco.
Holbrook, Merrill & Stetson, 64 Sutter St., San Francisco.
H. Mueller Manufacturing Company, 1072-76 Howard St., San Francisco.
J. L. Mott Iron Works, D. H. Gulick, selling agent, 553 Mission St., San Francisco.
Pacific Sanitary Manufacturing Co., 67 New Montgomery St., San Francisco.
West Coast Porcelain Manufacturers, 334-335 Wells Fargo Building, 85 Second St., San Francisco.

POLES AND PILING
Santa Fe Lumber Co., 16 California St., San Francisco.

PUMPS—HAND OR POWER
Chicago Pump Co., represented by Garnett, Young & Co., 612 Howard St., San Francisco.
Simonds Machinery Co., 117 New Montgomery St., San Francisco.
Ocean Shore Iron Works, 558 Eighth St., San Francisco.
Pelton Water Wheel Co., 2022 Harrison St., San Francisco.
S. F. Bowser & Co., Inc., 612 Howard St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
Wayne Tank & Pump Co., 430 Fourth St., San Francisco; 830 S. Los Angeles St., Los Angeles.
Byron Jackson Iron Works, 55 New Montgomery St., San Francisco.

REINFORCING STEEL
Edward L. Soule, Rialto Bldg., San Francisco.
Badt-Falk & Co., Call Bldg., San Francisco.
Judson Iron Works, San Francisco and Oakland.
Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
Pacific Coast Steel Co., Rialto Bldg., San Francisco.
Truscon Steel Co., 709 Mission St., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

REFLECTORS
I. P. Frink, Inc., 77 O'Farrell St., San Francisco.
Benjamin Electric Mfg. Co., 580 Howard St., San Francisco.

REFRIGERATORS
McCray Refrigerator Company San Francisco office, 765 Mission St.
"Frigedaire," Sold by W. L. Cochran, 880 Mission St., San Francisco.

ROOFING AND ROOFING MATERIALS
"Malthoid" and "Ruberoid," also "Pabco" ten and twenty year roofs, manufactured by the Paraffine Companies, Inc., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.
H. H. Robertson Co., Hobart Bldg., San Francisco.
Jones Brothers Asbestos Supply Co., 512 Second St., San Francisco.
Johns-Manville Inc., of California, 500 Post St., San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.

RUBBER TILING—INTERLOCKING
New York Belting & Packing Co., 518-19 Mission St., San Francisco.

RUGS & CARPETS
W. & J. Sloane, 216 Sutter St., San Francisco.

SAFETY TREADS
Pacific Materials Co., 525 Market St., San Francisco.

SAND
Coast Rock & Gravel Co., Call Bldg., San Francisco.
Del Monte White Sand, Del Monte Properties Co., 401 Crocker Bldg., San Francisco.

SASH AND CABLE CHAINS
Smith & Egge Mfg. Co., Bridgeport, Conn. Coast agents, Rawlins & Smith, San Francisco and Los Angeles.

SAFES AND VAULTS
Hermann Safe Company, 216 Fremont St., San Francisco.

SCALES
Toledo Scale Company, 676 Mission St., San Francisco.

SCENIC PAINTING—DROP CURTAINS, ETC.
The Edwin H. Flagg Scenic Co., 1638 Long Beach Ave., Los Angeles, and 17th and Mission Sts., San Francisco.

SCHOOL AND THEATER EQUIPMENT
H. Rumpf, 567 Howard St., San Francisco.

SHEATHING AND SOUND DEADENING
Samuel Cabot Mfg. Co., Boston, Mass., agencies in San Francisco, Oakland, Los Angeles, Portland, Tacoma and Spokane.
The Paraffine Companies, Inc., 34 First St., San Francisco.

SHEET METAL WORK
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
U. S. Metal Products Co., 330-10th St., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

SHINGLE STAINS
Bass-Hueter Paint Company, all principal Coast cities.
Cabot's Creosote Stains, sold by Pacific Bldg. Materials Co., 525 Market St., San Francisco.
Fuller's Pioneer Shingle Stains, made by W. P. Fuller & Co., San Francisco.

ELECTRICAL LAYOUTS AND PLANS
FOR BUILDINGS, INDUSTRIAL PLANTS, ETC.

ROBERT L. ST. JOHN

Phone Douglas 5902 1011 FLAT IRON BUILDING San Francisco, Calif.

BULL DOG FLOOR CLIPS

The use of this clip to anchor wood floors to concrete is cheap insurance against floor buckle and dry rot. Write for samples and special information.

BULL DOG FLOOR CLIP SALES CO.

77 O'Farrell St., San Francisco 600 Metropolitan Bldg., Los Angeles

L. T. KELLEY, General Manager

ARCHITECTS' SPECIFICATION INDEX—Continued

The Paraffine Companies, San Francisco, and principal Coast Cities.

SHUTTERS—ROLLING, FIRE, STEEL, WOOD
J. G. Wilson Corp, 621 North Broadway, Los Angeles.

SIGNALING & PROTECTIVE SYSTEMS
Holtzer-Cabot Electric Co., 125 Armory St., Boston; 408 Claus Spreckels Building, San Francisco.
Garnett, Young & Co., 612 Howard St., San Francisco.

SINKS—COMPOSITION
Petrium Sanitary Sink Co., Fifth and Page Sts., Berkeley.

SKYLIGHTS
H. H. Robertson Co., represented on the Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

STEEL HEATING BOILERS
Birchfield Boiler Company, Tacoma, Washington.
Kewanee Boiler, factory branch, Exposition Building, San Francisco.

STEEL TANKS, PIPE, ETC.
Ocean Shore Iron Works, 55 Eighth St., San Francisco.

STEEL TANKS
Main Iron Works, 1000 Sixteenth St., San Francisco
S. T. Johnson Co., 1337 Mission St., San Francisco.

STEEL AND IRON—STRUCTURAL
Central Iron Works, 621 Florida St., San Francisco.
Herrick Iron Works, 18th and Campbell Sts., Oakland.
Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
Judson Mfg. Co., 817-821 Folsom St., San Francisco.
Mortenson Construction Co., 19th and Indiana Sts., San Francisco.
Pacific Rolling Mills, 17th and Mississippi Sts., San Francisco.
Palm Iron & Bridge Works, Sacramento.
Raleton Iron Works, 20th and Indiana streets. San Francisco.
Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.
Western Iron Works, 141 Beale St., San Francisco.

STEEL LUMBER
The General Fireproofing Company, 20 Beale Street, San Francisco

STEEL ROLLING DOORS
Kinnear Rolling Steel Doors, sold by Pacific Building Materials Co., Underwood Bldg., San Francisco.
Wilson Rolling Steel Doors, the J. G. Wilson Corporation, 621 North Broadway, Los Angeles and Waterhouse Wilcox Co., 523 Market St., San Francisco.

STEEL SASH
Bayley-Springfield solid steel sash, sold by Pacific Materials Co., 525 Market St., San Francisco.
"Fenestra" Solid Steel Sash, manufactured by Detroit Steel Products Co., factory sales office, 251 Kearny St., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
U. S. Metal Products Company, 330 Tenth St., San Francisco.
Truscon Steel Company, 709 Mission St., San Francisco.

STEEL TANKS
Main Iron Works, 1000 Sixteenth Street, San Francisco.

STEP AND WALK BRICK
California Brick Company, 604 Mission St., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.

STONE
Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana.

STREET LIGHTING EQUIPMENT
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

STUCCO, COMPOSITION
California Stucco Co., Hobrook Building, San Francisco.
Hoff Magnesite Co., San Francisco. Miller & Alf, 337 Monadnock Bldg., San Francisco, general agents.

STUCCO-PLASTER REINFORCEMENT
National Steel Fabric Company, A. C. Rulofson Co., Pacific Coast Sales Managers, Monadnock Building, San Francisco.

STUDDING—FIREPROOF STEEL
The General Fireproofing Company, 20 Beale Street, San Francisco

SWITCHES AND SWITCHBOARDS
Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

TELEPHONES—AUTOMATIC
P-A-X System, represented by Direct Line Telephone Company, 37 California Street, San Francisco.

TELEPHONE SYSTEMS
Direct Line Telephone Co., 37 California Street, San Francisco.
"Connecticut" Intercommunicating Telephones, Myers & Schwartz, 71 New Montgomery St., San Francisco.
"Stromberg-Carlson Telephones," Garnett Young & Company, 612 Howard St., San Francisco.

THEATER AND OPERA CHAIRS
C. F. Weber & Co., 365 Market street, San Francisco.
Western States Seating Co., 133 Kearny St., San Francisco.

THERMOSTATS FOR HEAT REGULATION
Johnson Service, Rialto Bldg., San Francisco.

TILES FOR FLOORS, MANTELS, ROOFS
Cannon & Co., Sacramento; and 77 O'Farrell St. San Francisco.

W. & J. SLOANE

216-228 SUTTER STREET
SAN FRANCISCO
Phone: GARFIELD 2838

LINOLEUMS
WINDOW SHADES
CARPETS
FURNITURE

WESIX ELECTRIC HEATING SYSTEMS
FOR HOTELS, APARTMENTS, PUBLIC BUILDINGS, RESIDENCES
W. WESLEY HICKS, Manufacturer
Rialto Building Tel. Doug. 1187 San Francisco

ARCHITECTS' SPECIFICATION INDEX—Continued

Gladding, McBean & Co., Crocker Bldg., San Francisco.
Livermore Fire Brick Works and California Brick Company, 604 Mission St., San Francisco.
S. & S. Tile Co., 4th and Carrie Streets, San Jose.
Bonded Floors Company, 370 Second St., San Francisco; 263 So. Los Angeles, St., Los Angeles.

TRAVELING CRANES
Cyclops Iron Works, 837 Folsom St., San Francisco.

VALVES—PIPES AND FITTINGS
Crane Radiator Valves, manufactured by Crane Co., Second and Brannan Sts., San Francisco.
Grinnell Co., 453 Mission St., San Francisco.
O. M. Simmons Co., 115 Mission St., San Francisco.
H. Mueller Mfg. Co., 1072 Howard St., San Francisco.
Kennedy Valve Mfg. Co., 23-25 Minna street, San Francisco.

VALVE PACKING
N. H. Cook Belting Co., 317 Howard St., San Francisco.

VARNISHES
Bass-Hueter Paint Company, Mission, near 4th street, San Francisco, and all principal Coast cities.
W. P. Fuller Co., all principal Coast cities.
R. N. Nason & Co., San Francisco, Los Angeles, Portland and Seattle.
Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

VENEERS AND VENEERED PANELS
White Brothers, 5th and Brannan Streets, San Francisco.

VENTILATORS
H. H. Robertson Co., represented on the Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

VITREOUS CHINAWARE
Pacific Sanitary Manufacturing Company, 67 New Montgomery St., San Francisco.
West Coast Porcelain Manufacturers, Wells Fargo Building, San Francisco.

WATERPROOFING (See Damproofing)
Medusa Waterproofing, manufactured by Sandusky Cement Co., Cleveland, Ohio. Carried in stock and sold by leading building supply dealers in California, Oregon and Washingt
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

WALL BEDS—SEATS, ETC. (See Beds)

WALL BOARD
"Amiwud" and "Pabco," manufactured by The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
"Campo-Board," White Brothers, distributors, 5th and Brannan Streets, San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.

WALL PAINT
Nason's Opaque Flat Finish, manufactured by R. N. Nason & Co., San Francisco, Portland and Los Angeles.

WALL PAPER AND DRAPERIES
The Tormey Co., 681 Geary St., San Francisco.
W. & J. Sloane, 216-228 Sutter St., San Francisco.
Uhl Bros., San Francisco.

WARDROBES, SCHOOL
W. L. Evans, 700 Block B., Washington, Indiana
James G. Wilson Corporation, 11 East 36th St., New York and Los Angeles.

WATER SUPPLY SYSTEMS
Kewanee Water Supply System—Simonds Machinery Co., agents, 117 New Montgomery St., San Francisco.

WATERPROOFING
U. S. Elaterite Products Co. of the Pacific, American National Bank Building, San Francisco.

WHEELBARROWS—STEEL
Western Iron Works, Beale and Main Sts., San Francisco.

WHITE ENAMEL
"Gnld Seal," manufactured and sold by Bass-Hueter Paint Co. All principal Coast cities.
"Silkenwhite," made by W. P. Fuller & Co., San Francisco.
"Satinette," Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., 34 First St., San Francisco. Los Angeles, Portland and Seattle.

WINDOW SHADES
W. & J. Sloane, 216 Sutter street, San Francisco.
D. N. & E. Walter, 562 Mission street, San Francisco.

WINDOW SASH CHAIN
The Smith & Egge Mfg. Co., Bridgeport, Conn. Coast agents, Rawlins & Smith, 604 Mission St., San Francisco, and 618 American Bank Building, 2nd and Spring Sts., Los Angeles.

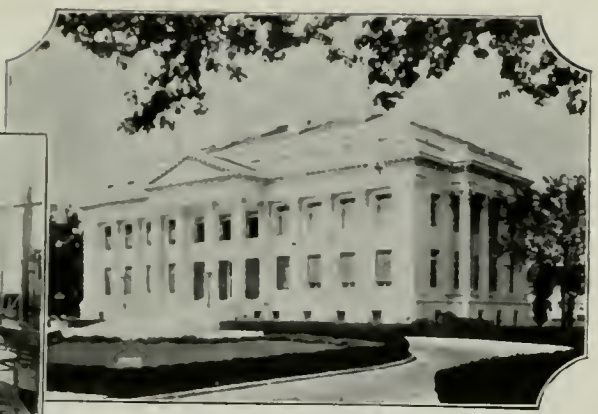
WINDOWS, REVERSIBLE, CASEMENT, ETC.
Hauser Window Co., 1362 Harrison St., San Francisco.
J. G. Wilson Corporation, 621 N. Broadway, Los Angeles; Waterhouse-Wilcox Co., Underwood Bldg., San Francisco.
Critall Casement Window Company, Detroit; Waterhouse-Wilcox Company, agents, 523 Market St., San Francisco.
Universal Sales Co., 1916 Broadway, Oakland; San Francisco, Los Angeles and Portland.

WIRE, ELECTRICAL
Garnett Young & Company, 612 Howard St. San Francisco.
Electric Appliance Company, 809 Mission St., San Francisco.
"Lowell" Rubber Covered Wire sold by Myers & Schwartz, 90 New Montgomery St., San Francisco.

WIRE FENCE
Standard Fence Co., 245 Market street, San Francisco; and 310 12th street, Oakland.

GLOBE AUTOMATIC SPRINKLERS
Will protect your building and business from destruction by fire and reduce your Insurance Rate. Write for estimates.
Pacific Fire Extinguisher Company
FIRE PROTECTION ENGINEERS
424-440 Howard Street, San Francisco Manufacturing Plant, 298 Fremont St.

At right, is shown the National Headquarters of the American Red Cross, and in the circle one of the assembly rooms, floored with oak. Below, oak floors in the laboratory of the Bureau of Standards, Washington, D. C.



OAK
is standard

Throughout the middle ages, old world craftsmen entrusted their finest inspirations to oak, because of its endurance, its dignity, and its lasting beauty. The matchless edifices of Europe exhibit in an infinite variety the recognized utility of oak.

Today, in all countries, this same appreciation extends to oak flooring. For its cleanliness and durablity, as well as its natural beauty, oak is the chosen flooring in public buildings of widely varying use.

It is peculiarly fitting that oak flooring graces the National Headquarters of the American Red Cross in Washington, D. C., and gives excellent service in the laboratories of the Bureau of Standards.

Literature on modern oak flooring of value to architects will be mailed on request.

OAK FLOORING BUREAU
1036 Asland Block, Chicago

Put your flooring problems up to our experts. We will gladly serve you

OAK FLOORS

CONSULT AN ARCHITECT BEFORE BUILDING

See our catalog in Sweet's 17th edition, page 481

NATURE'S GIFT OF EVERLASTING BEAUTY

MODERN HEATING SERVICE

A steam or hot water heating system with a boiler burning gas fuel is one of the most satisfying methods of heating known today. It is convenient, dependable and healthful heating equipment for the home. The element of fire hazard is minimized, thereby assuring safety.

With such a gas fired heating system the home may be automatically maintained at uniform temperature. You control the time interval and degree of heat by merely setting the thermostatic regulator.

Heating systems using Gas Fuel are so flexible and economical in operation that they are adopted to any style of home or building.

A company expending more than $5,000,000 this year to meet the increasing demand for gas.

PACIFIC GAS AND ELECTRIC COMPANY

P·G·and E·

"PACIFIC SERVICE"

194-1123

Nonpareil Corkboard Insulation

for Cold Storage Rooms

ESTIMATES FURNISHED FOR
COMPLETE ERECTION

VAN FLEET FREEAR COMPANY

557 HOWARD STREET
SAN FRANCISCO

1231 BROADWAY
FRESNO

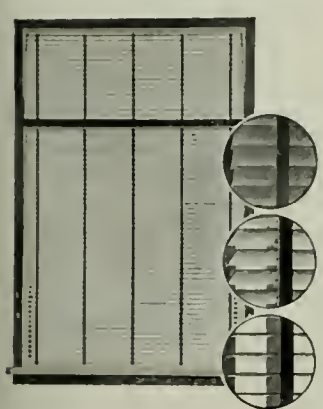
American Commercial and Savings Bank, Redondo, Calif. Equipped with Western Venetian Blinds. Architect: Ray Alderson, *San Diego, Cal.*

Better Blinds for Banks

THESE are the logical reasons why leading architects prefer Western Venetian Blinds as window equipment for Banks. Because they:—

—Utilize 100 per cent of available window area for lighting purposes.
—Permit the regulation of daylight and ventilation.
—Eliminate the intense glare of the sun, and change bright sunlight into soft, restful daylight.
—Reduce the heat from the sun.
—Serve in place of both awnings and shades, and perform a better service.
—Give from 20 to 30 years of satisfactory service at a minimum of maintenance.
—Harmonize with, and enhance the architectural beauty of business structures.

No other window equipment will render such efficient service, for so long a time, at an equally low cost.



Western Venetian Blinds can be Instantly and easily Adjusted to Regulate Light and Ventilation

Write for Special Bank and Office Building Catalogs

Pages *1081* to *1085* Inclusive 17th Edition

Western Blind & Screen Company

General Offices, Los Angeles; Factories, Los Angeles and Kansas City

New York, N. Y., 25 W. 43rd St. Chicago, Ill., 326 W. Madison St.
Atlanta, Ga., 309 Flatiron Bldg. Portland, Ore., 213 Fitzpatrick Bldg.
Kansas City, Mo., 14th & Montgall San Francisco, Cal., 921 Hearst Bldg.
Texas Agents: Two Republics Sales Service
523 Hicks Bldg., San Antonio Kirby Bldg., Dallas

Western Venetian Blinds

MORE LIGHT~MORE AIR~LESS GLARE

E. B. Noble, President
A. E. Wilkins, Vice-Pres.

Beam, Angle, Channels, and Universal Mill Plates for immediate shipment from stock

Pacific Rolling Mill Co.

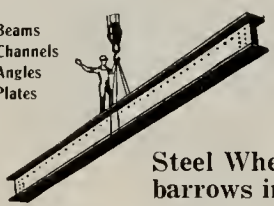
SUPPLIERS OF

FABRICATED STRUCTURAL STEEL, Forgings Bolts, Rivets, Frogs, Switches, Cast Iron Castings

General Office and Works
17th and MISSISSIPPI STS., SAN FRANCISCO
Telephone Market 215

W. B. MORRIS, Pres. H. H. MORRIS, V.-P. L. J. GATES, Sec.

Beams
Channels
Angles
Plates



Steel Wheelbarrows in Stock

Western Iron Works

STRUCTURAL IRON AND STEEL CONTRACTORS

141-147 Beale St. and 132-148 Main St. SAN FRANCISCO
Phones: GARFIELD 2575—2576

Bliss & Faville, Architects

Steel Frame, California State Building, Civic Center, San Francisco.

FABRICATED BY

THE PALM IRON AND BRIDGE WORKS (Incorporated)

15th and R Streets, Sacramento

WESTERN ASBESTOS MAGNESIA CO.

INSULATING ENGINEERS AND CONTRACTORS

CELOTEX
INSULATING LUMBER

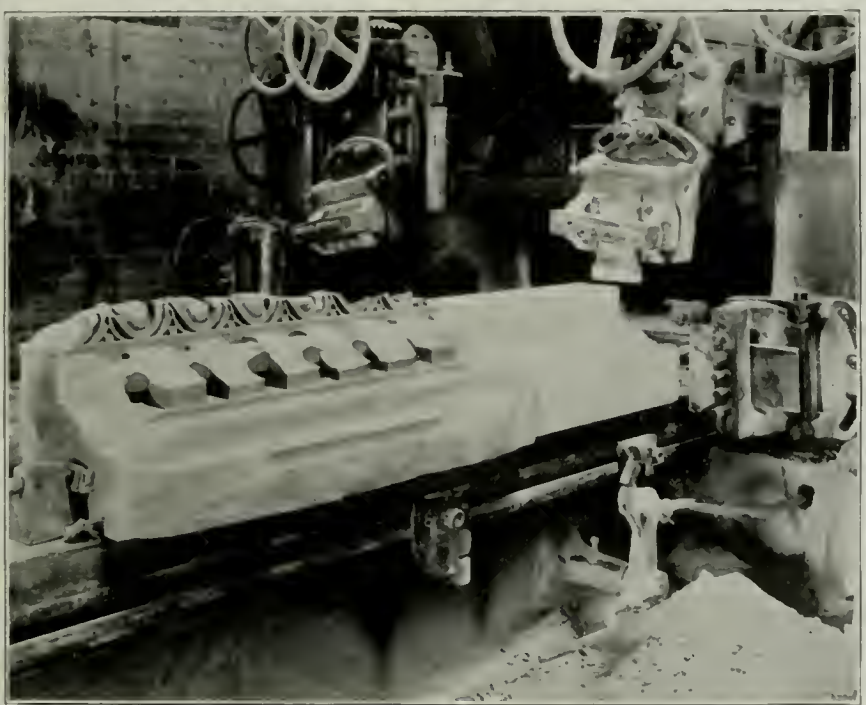
PLASTER BASE
INSULATOR
SOUND DEADENER
ACOUSTIC CORRECTOR

Asbestos and Asphalt Slate Shingles and Roofings
Asbestos and Composition Roofings—Roof Coatings
Magnesia and Asbestos Pipe and Boiler Coverings
Cold Storage Insulation—Sectional Expansion Paving Joint
"Linofelt" Sound Deadener—Wall Board
Cork Pipe Covering, Board and Granulated Cork

21-29 South Park
Bet. 2nd and 3rd Sts.

Telephone Douglas 3860

San Francisco, Cal.



Indiana Limestone now being re-worked for use in a new building, after serving for twenty years as facing of building at 41st Street and Madison Avenue, New York City

Interminable Service!

When an Architect or Contractor recommends the use of Indiana Limestone, he can assure the owner a building material that will indeed give him "full value received." For this natural stone has one quality found in no other building material—*its remarkable salvage value.*

Indiana Limestone will stand the severest test of service: exposure to the elements for innumerable years with no appreciable deterioration. And its worth is increased through its easy workability. After a half a century's use, it may be taken from a building, re-cut and re-worked for use in new structures. There is no other building material which affords equal durability.

Our handsomely illustrated booklet on bank building will be sent free upon request. Address Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana. Service Bureaus in New York and Chicago.

INDIANA
LIMESTONE
The NATION'S BUILDING STONE

Steam Heating and Ventilating

For Commercial and Public Buildings

Furnace Heating for the Home

Mangrum & Otter, Inc.

827-831 Mission Street San Francisco, Cal.

Phone Kearny 3155

FOR PERFECT ILLUMINATION

Specify **Solar Lighting Fixtures**

The most efficient commercial lighting unit on the market for diffusion and quality of light. A wide range of types from plain commercial to ornamental strap iron designs are carried in stock.

Write for Booklet Showing Complete Line

D. DIERSSEN COMPANY

20 Second Street San Francisco

SAFETY RELIABILITY ECONOMY

The three dominant factors in specifying elevators

Pacific Elevators are always safe, and the many installations is proof of their reliability. Alternating current driven elevators are fully as satisfactory as direct current driven machines for high-speed installations, and the cost of power and upkeep is much lower.

Estimates Cheerfully Given

Pacific Elevator & Equipment Company

1129-31 HOWARD STREET SAN FRANCISCO, CALIF.

MANUFACTURERS OF A. C. & D. C. ELEVATORS—PASSENGER OR FREIGHT

Fenestra

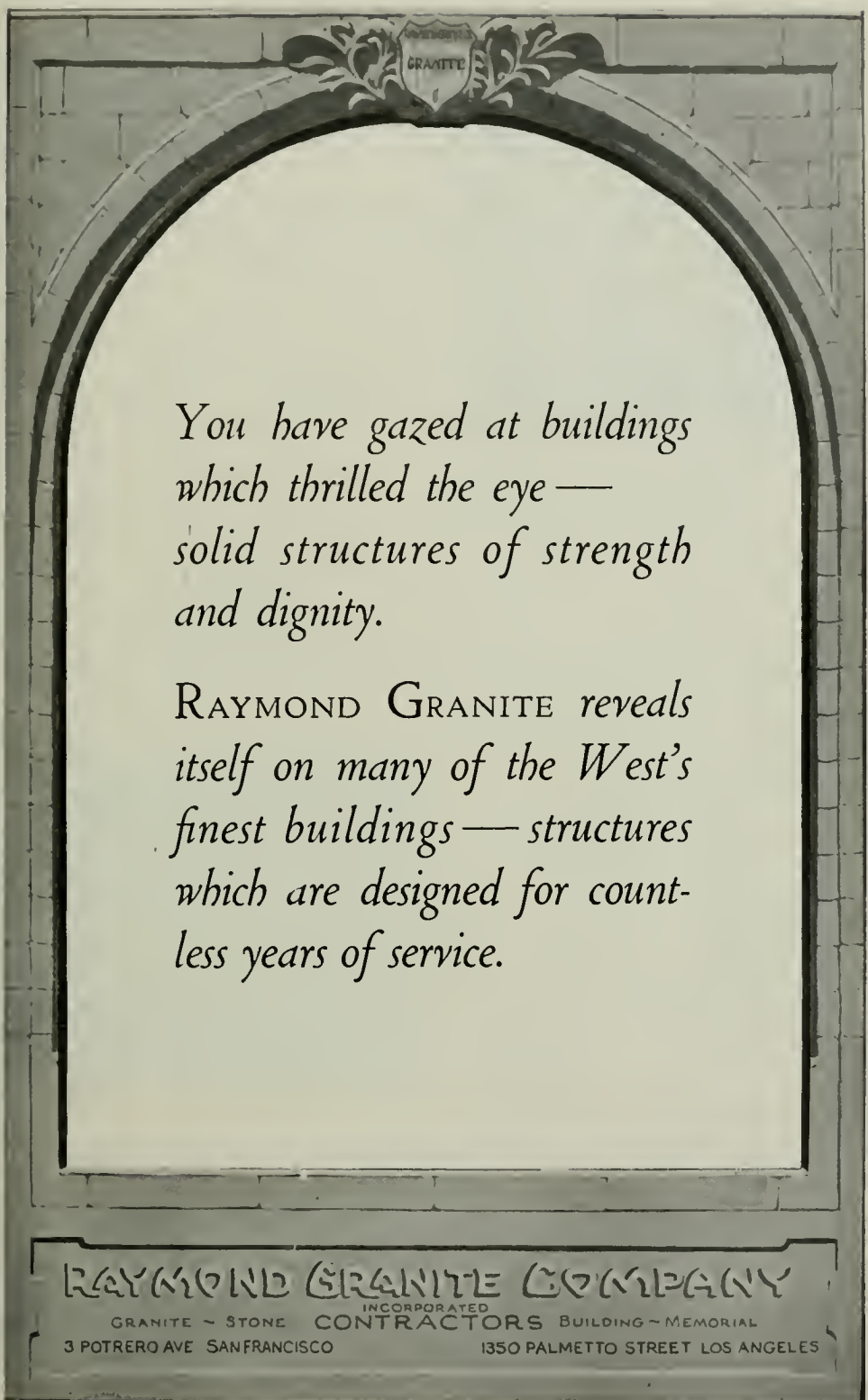
SOLID STEEL WINDOWS

DETROIT STEEL PRODUCTS CO., Detroit

251 Kearny Street, San Francisco Phone Sutter 1250

Pacific Coast Branch Factory at Emeryville

When writing to Advertisers please mention this magazine.



You have gazed at buildings which thrilled the eye — solid structures of strength and dignity.

RAYMOND GRANITE *reveals itself on many of the West's finest buildings — structures which are designed for countless years of service.*

RAYMOND GRANITE COMPANY
INCORPORATED
GRANITE ~ STONE CONTRACTORS BUILDING ~ MEMORIAL
3 POTRERO AVE SAN FRANCISCO 1350 PALMETTO STREET LOS ANGELES

In hotels where the subdivision of rooms is often necessary for conventions or small gatherings. Sectionfold Partitions are economical and efficient.

The Next Room Took the Overflow

PERHAPS at some time you have been one of those "next roomers." Or had to crane your neck to look through a doorway to see a speaker in the next room. Or maybe you have sat in some small meeting held in a big, poorly lighted, half heated room because there was no small room available.

For both such occasions Sectionfold Partitions were made. With them you can turn one room into many, many into one. Small rooms into big ones. Or large rooms into small, easily heated ones. And they can be made to match any interior, old or new. May we send you our catalouge No. 1 with the whole story?

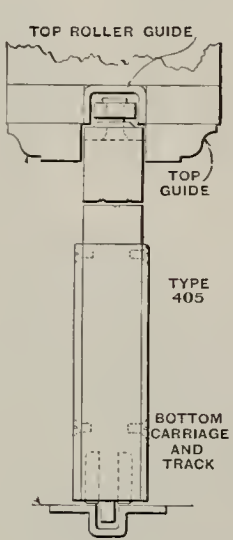
The J. G. WILSON Corp.
11 East 36th Street, New York City
621 N. Broadway, Los Angeles, Cal.
OFFICES IN ALL PRINCIPAL CITIES

Established 1876
Wilson
DOORS - PARTITIONS - BLINDS
WARDROBES
THE J.G. WILSON CORPORATION
NEW YORK CITY

McCABE HANGERS

for

Accordion Doors *and* Folding Partitions



Arrange the partitions as you may desire and we can furnish the hangers to operate them.

Write for our set of details No. 4C.

THE McCABE HANGER MFG. CO.

W. H. Steel, Agt.
Los Angeles

425 W. 25th St.
New York

More light— less money per opening

Metprodco Reversible and Double Hung Steel Windows are made of the universally acknowledged rust resisting Keystone Copper Steel with Slender and graceful solid steel sash members which admit the passage of the maximum of light. They can be made to conform with any type of architecture. Both windows are approved and labeled by the Underwriters Laboratories.

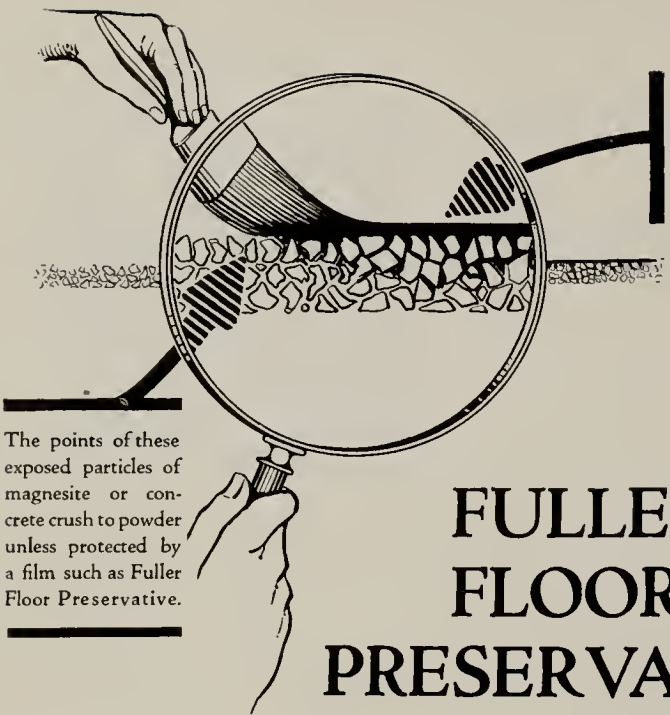
You won't go wrong—

by ordering or specifying Pacific Flat Section Steel Sash. Made to meet the popular demand for a well constructed sash for less money. Furnished with reversible or pivoted ventilators; or with hinged casements.

"PACIFIC COAST PRODUCTS"

UNITED STATES METAL PRODUCTS CO.

330 Tenth St., San Francisco, Calif.
Lumber Exchange, Seattle, Wash.
Exchange Bldg., Portland, Ore.
Bank of Italy Bldg., Los Angeles, Calif.
Paulsen Bldg., Spokane, Wash.
Provident Bldg., Tacoma, Wash.



Note how this tough transparent film penetrates between the particles, binding them together and protecting them from wear, moisture or oil.

The points of these exposed particles of magnesite or concrete crush to powder unless protected by a film such as Fuller Floor Preservative.

FULLER FLOOR PRESERVATIVE

preserves magnesite & concrete floors

Here is a finish for magnesite and concrete floors that combines beautifying and preserving qualities with low cost.

It is exceptionally tough and elastic and proof against moisture, water, oil or grease to an extraordinary degree.

Obviously then Fuller Floor Preservative is a splendid product for finishing the floors of garages, automobile showrooms, warehouses, or other floors subjected to hard and constant wear or which are liable to become bespattered with grease, oil or water and yet must be kept in a presentable condition.

FULLER

PAINTS Since '49 **VARNISHES**

W. P. FULLER & CO.

301 MISSION ST. SAN FRANCISCO

JOHN MUIR JUNIOR HIGH SCHOOL
LOS ANGELES JOHN C. AUSTIN, *Architect*

Another

UNIVERSAL WINDOW

INSTALLATION

AWNING TYPE

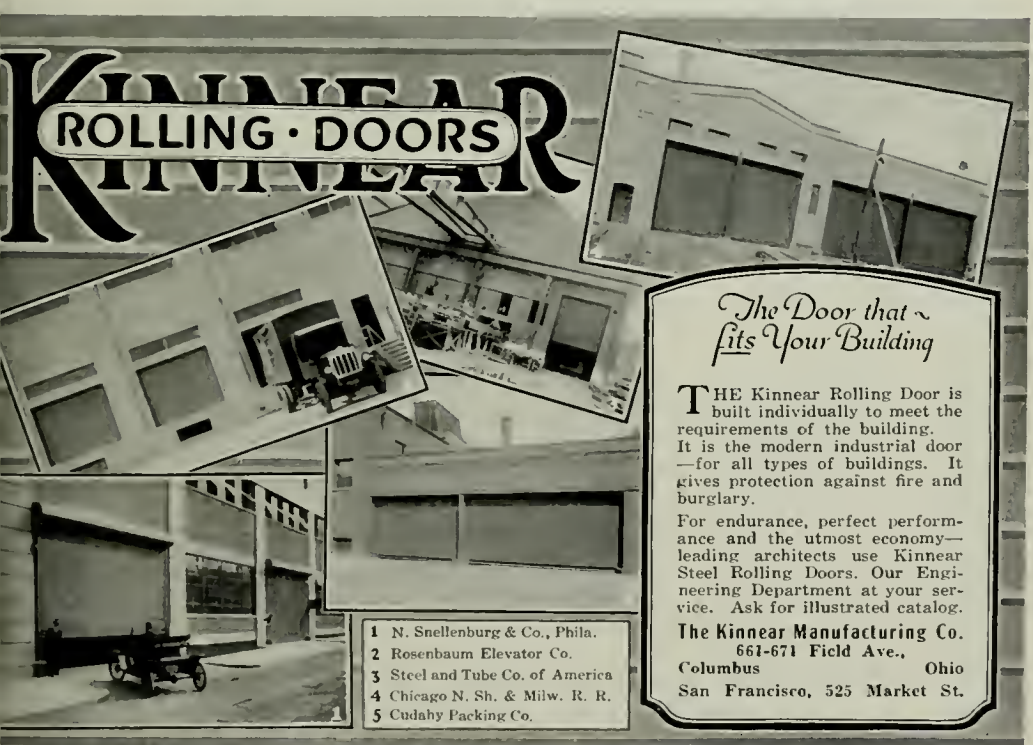
UNIVERSAL

SALES COMPANY

GENERAL SALES OFFICE, 1916 BROADWAY, OAKLAND

SAN FRANCISCO LOS ANGELES SACRAMENTO RENO, NEV. PORTLAND, ORE. SALT LAKE CITY, UTAH
NEW ORLEANS, LA. FORT WORTH, TEXAS PITTSBURGH, PENN. DENVER, COLO. CHATTANOOGA, TENN

KINNEAR ROLLING · DOORS



The Door that fits Your Building

THE Kinnear Rolling Door is built individually to meet the requirements of the building. It is the modern industrial door —for all types of buildings. It gives protection against fire and burglary.

For endurance, perfect performance and the utmost economy—leading architects use Kinnear Steel Rolling Doors. Our Engineering Department at your service. Ask for illustrated catalog.

The Kinnear Manufacturing Co.
661-671 Field Ave.,
Columbus Ohio
San Francisco, 525 Market St.

1 N. Snellenburg & Co., Phila.
2 Rosenbaum Elevator Co.
3 Steel and Tube Co. of America
4 Chicago N. Sh. & Milw. R. R.
5 Cudahy Packing Co.

"SIGHT UNSEEN"

but doing duty, nevertheless,

our

Steel Bar

jobs, fabricated and installed, have helped to dot San Francisco's skyline with stately structures of enduring strength.

Gunn, Carle & Co.

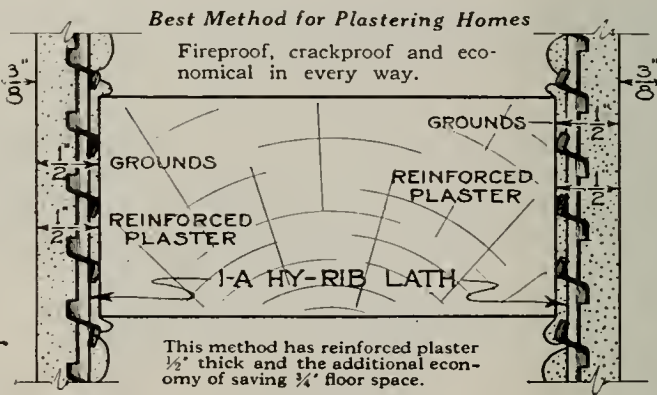
444 Market St., San Francisco

Phone Sutter 2720

Make the home fireproof

Best Method for Plastering Homes

Fireproof, crackproof and economical in every way.



This method has reinforced plaster ½" thick and the additional economy of saving ¾" floor space.

Specify TRUSCON 1-A METAL LATH with ½" grounds which is available at a cost comparable with Wood Lath.

Ask us for detailed information

TRUSCON STEEL COMPANY

Chas. Halloway, Branch Manager

709 MISSION ST. Phone Douglas 7135 SAN FRANCISCO

When writing to Advertisers please mention this magazine.

Matson Building, *San Francisco* Bliss & Faville, *Architects* Lindgren-Swinerton Co., *Builders*

ARMCO-INGOT

Herringbone

RIGID METAL LATH

Used on above 16 story office building and also on the following buildings illustrated in this issue:

California Commercial Alexander
Union Standard Oil
Balfour Fitzhugh

The General Fireproofing Co.

20 Beale Street, San Francisco

Not a substitute for Anything!

But a vast improvement over lath and plaster for lining walls and ceilings

Manufactured by
NATIONAL MILL & LUMBER CO.
318 Market St. San Francisco

Pacific Five-Ply Board is really lath and plaster in the proper proportions and in convenient form. It is a wood core encased in a fireproof, moisture proof mineral cement, stronger than the best concrete.

By actual tests Pacific Five-Ply Board is far superior to either pulp wall board or plaster board in tensible strength, deflection and resistance to puncture. Will not contract or expand, bulge, warp, crack or crumble; is air tight and fire resistant.

Pacific Five-Ply Board is sawed and worked just as you would handle lumber. It comes in sheets 4 feet wide and in lengths from 6 to 16 feet. It is strong, durable, attractive in appearance, easily installed, sanitary, and economical. Send for descriptive literature.

GOODS OF HM&S QUALITY

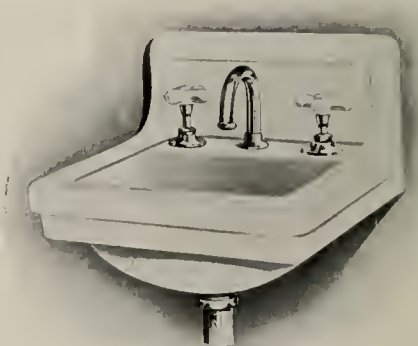
This TRADE MARK means much to the conscientious Architect and Builder

It means a satisfied client

High-Grade Plumbing Fixtures

Holbrook, Merrill & Stetson

64 SUTTER STREET
SAN FRANCISCO



New City Hall, Long Beach, California.

W. Horace Austin, Architect.

The Floors Are Protected by

BASS-HUETER FLOOR VARNISH

The floors in the New City Hall, Long Beach, California, are protected by a coat of varnish thinner than a sheet of paper in this magazine.

Think of what that minute coating is called upon to do!

Thousands of feet walk on it every day, grinding on its surface the dirt and grit that is carried in from the street.

Could a Varnish be asked to stand a more practical test?

This is but one of a number of Bass-Hueter Varnishes that have been giving the maximum of service on the Coast for over 60 years. They have not only been used on some of the largest buildings and finest homes, but are being used today by the leading Western railroads and other important buyers of high grade Varnishes.

Bass-Hueter Paint and Varnishes are to be had in the principal towns and cities on the Coast, insuring the painter of a ready stock to draw from in following your specifications.

BASS-HUETER PAINT CO.

LOS ANGELES
PORTLAND
HOLLYWOOD
LONG BEACH
SAN FRANCISCO
TACOMA
FRESNO
SANTA ANA
SEATTLE
OAKLAND
PASADENA
HONOLULU, T. H.

Specify **HANDY FLUSH VALVES**

It is NON-CLOGGING

It functions perfectly with any make or kind of bowl.
Gives perfect cleansing flush — washes bowl clean.

Model A—Indirect Flush: For residences served by one-half inch supply pipe.

Model B — Direct Flush: For hotels, office and other buildings served with three-quarter inch or larger supply pipe.

Write for complete catalogue.

HANDY SELF-CLEANING FLUSH VALVE CO.

731 FOLSOM STREET, SAN FRANCISCO, CAL.

Demonstration in Universal Exhibits Monadnock Bldg., San Francisco

ALL CAST IRON—3 Sizes (3, 5, and 7 Sections)

RA-DO FUMELESS GAS **RADIATORS**

The Ideal "Year-Round" Heating System For The Home—New or Old

Easiest and Cheapest to Install
Lowest Operating Cost

POTTER RADIATOR CORPORATION

5954 Pasadena Ave., LOS ANGELES
393 Sutter St., SAN FRANCISCO
1700 San Pablo Ave., OAKLAND

POWER AND HEATING
BOILERS

STEEL TANKS, STACKS, BREECHINGS, SHEET AND PLATE WORK
MACHINERY AND IRON CASTINGS

MAIN IRON WORKS

Main Office and Works: 7th, DAGGETT AND 16th STS. San Francisco, Calif.
Telephone Market 752-753

PUMPING MACHINERY

"AMERICAN-MARSH"
House, Sump *and*
Fire Pumps

FOR ALL SPECIF CATIONS

SIMONDS MACHINERY CO., 117-121 New Mortgomery Street
PHONE KEARNY 1457 SAN FRANCISCO

Physicians' Building, Oakland. Willis Lowe, Architect. P. A. Palmer, Builder

RICHMOND RED RUG BRICK

AND CREAM COLOR TERRA COTTA

are here combined with most effective results. Beauty and economy were factors in influencing the use of RICHMOND BRICK

United Materials Company
Northern California Distributors
SHARON BUILDING, SAN FRANCISCO

The Wayne Rapid-Rate Water Softener Regenerates in 20 Minutes or Less

1. The Wayne is the original and only thoroughly developed Rapid-Rate System of Water Softening.
2. It possesses the highest rate of softening activity.
3. It regenerates efficiently with a brine contact period of less than five minutes.
4. It is completely regenerated,—all operations, backwashing, salting, reflushing,—in twenty minutes.
5. Per unit of capacity, it requires the least space.
6. It possesses a flexibility of performance that reduces storage requirements to a minimum, or eliminates storage entirely.
7. It fits the hour-to-hour, or day-to-day requirements for soft water with such flexibility as to prevent sacrifice of capacity or waste of salt.
8. It takes the least time and attention of the operator.
9. It is sold at a reasonable price consistent with the use of the best materials, the best designs, and the best of business methods.
10. It is thoroughly standardized in construction and performance.
11. It is unquestionably the leader in its field

The Wayne Softener thoroughly standard booklet of specifications for architects and engineers is now ready for your files. Send for it today and be ready to give your clients concrete facts about the advantages of soft water and the low cost of a Wayne installation.

Way

Symbol of Satisfaction

Be Ready With Data On Water Softening

Especially in "hard water districts," every architect and every consulting engineer should have within reach the Wayne Book of Specifications for Wayne Rapid-Rate Water Softeners and Rapid Pressure Filters.

This book of specifications is issued to architects and consulting engineers for power plants, hotels, hospitals, manufacturing plants, laundries, textile mills, clubs and homes.

It is thoroughly standard. It supplies just the information both you and your clients require about the most efficient, lowest cost method of water softening.

The superiorities of the Wayne Water Softener are sharply defined. On the opposite page, these superiorities are clearly, briefly listed. Read them.

We will gladly supply any further information, or any special assistance, that you may require. Call upon us for service entirely without obligation of any kind on your part.

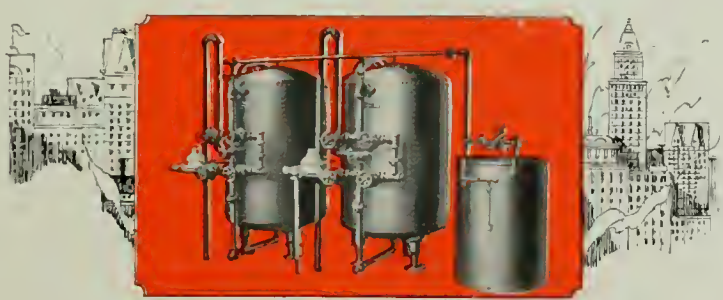
Wayne Tank & Pump Co., 862 Canal St., Fort Wayne, Ind.

Wayne Tank & Pump Co. of Canada, (Ltd.), Toronto, Ontario, Canada
Wayne Tank & Pump Co., 9 Kingsway, London, W. C. 2, England

Division Offices in: Atlanta, Boston, Chicago, Cincinnati, Cleveland, Columbus, Dallas, Dayton, Des Moines, Detroit, Indianapolis, Jacksonville, Kansas City, Milwaukee, Minneapolis, New York, Omaha, Peoria, Philadelphia, Pittsburgh, San Francisco, St. Louis and South Bend

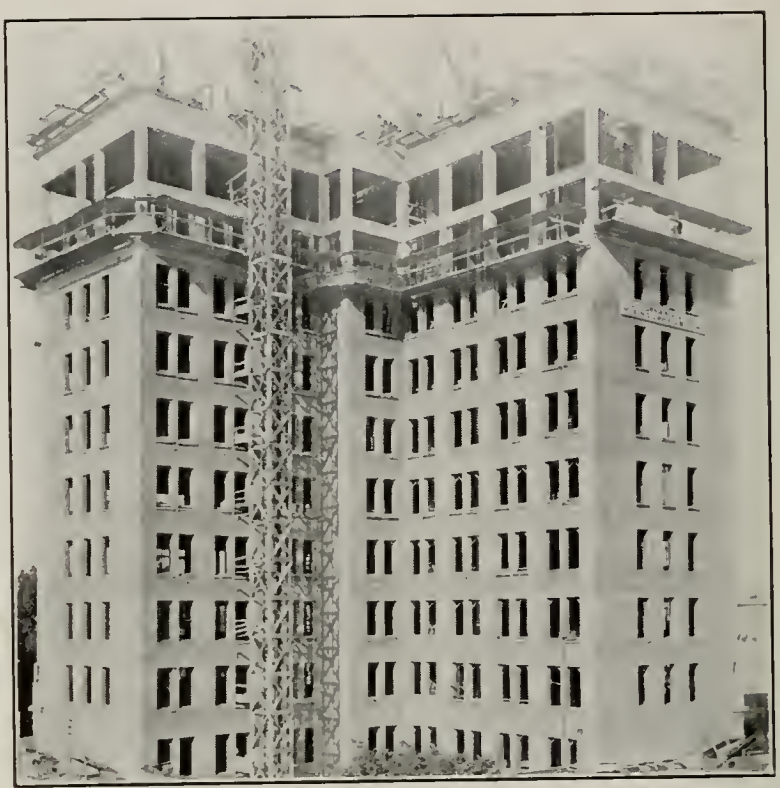
Warehouses in: Philadelphia and San Francisco

An International Organization With Sales and Service Offices Everywhere



REG. U.S. TRADE MARK

Wayne equipment is manufactured completely in one plant and every phase of its operation is backed and guaranteed by the largest institution in the world producing water softeners, with 30 years' experience and a sales and service organization international in scope.



Geo. C. Sellon & Co., Architects Lindgren-Swinerton Co., Contractors

California State Life Ins. Bldg.

FACED WITH

CANNON FACE BRICK

The entire south and west walls of this splendid fourteen-story building now being completed on the corner of 10th and J Streets, are faced with Cannon Face Brick.

This is only one of the many business blocks recently erected in Sacramento that have been faced with Cannon Face Brick.

CANNON & CO.

Manufacturers of Face Brick, Floor Tile and Denison Interlocking Tile

OFFICE AND PLANT: 12th STREET AND S. P. RY., SACRAMENTO
EXHIBIT 77 O'FARRELL STREET. SAN FRANCISCO

Old Mission Portland Cement Company

Each shipment of "OLD MISSION" Portland Cement is guaranteed not only to equal but to surpass all requirements of the standard specifications for Portland Cement as adopted by the U. S. Government and by the American Society for Testing Materials. A Guarantee Certificate is mailed with the bill of lading of each car, giving number of car, date packed, and number of barrels, over the signature of the chief chemist.

8000 SACKS DAILY

SALES OFFICE:

MILLS BLDG., SAN FRANCISCO

PHONE SUTTER 3075

PLANT:

SAN JUAN, CAL.

ATCHISON
REVOLVING DOORS

Straight or Curved Wings

ASK FOR CATALOG

PACIFIC MATERIALS CO., 525 MARKET ST., S. F.

PALACE HARDWARE CO.

Good Buildings Deserve Good Hardware

581 MARKET ST.

CORBIN

6063 SUTTER

"San Francisco's Leading Hardware Store"

EMPIRE
HARDWALL PLASTER

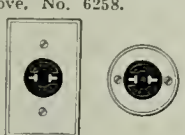
MANUFACTURED BY

Pacific Portland Cement Company, Consolidated

PACIFIC BUILDING PORTLAND | SAN FRANCISCO SAN JOSE | PHONE GARFIELD 4100 LOS ANGELES

HUBBELL

Duplex Convenience Outlet, Composition body No. 5890; Porcelain body No. 6257. Standard brass flush plate for either of above, No. 6258.



Hubbell Convenience Outlets are also made in the single types shown above, with round or rectangular plates.

Where the Sideboard goes— a Duplex Outlet

Whether making the breakfast toast and coffee, or an after-theatre rarebit, a woman client is always thankful for an architect's foresight in locating a Hubbell Duplex Convenience Outlet waist high, alongside the sideboard.

Hubbell Duplex Outlets provide double service without extra wiring. Their double Te-Slots take any standard cap, whether the blades be parallel or tandem. Made with shallow bodies for thin partitions.

Our fullest cooperation in advantageously locating outlets in any class of building is gladly extended.

HARVEY HUBBELL INC
ELECTRICAL WIRING DEVICES
BRIDGEPORT CONN. U.S.A.

Remember it's the Te Slots, that make outlets "Convenient"

Stamped

On Every Piece

THERE'S no chance to go wrong if you order ACORN Oak Flooring, for it is plainly trade-marked. Every piece of ACORN tongued and grooved flooring bears both the ACORN Brand and the stamp of the Oak Flooring Manufacturers Association. Every bundle of ACORN Flooring is stamped with the oak leaf and acorn.

Merely specifying "oak flooring" does not always result in a satisfactory floor. The one way to be certain you are getting carefully graded, carefully milled American-grown *guaranteed* Oak is to ask for ACORN trade-marked flooring.

ACORN HARDWOOD FLOORS OAK

Sold by Reliable Lumber Dealers Everywhere

O-'8

STRABLE HARDWOOD COMPANY

DISTRIBUTORS

STRABLEWOOD QUALITY HARDWOODS

537 First Street **Oakland, California**

No better varnishes are made

PABCO Varnishes

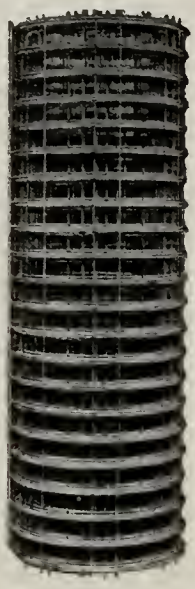
one of the famous TRADE MARK PABCO PRODUCTS

The PARAFFINE COMPANIES, Inc.

A $12,000,000 Corporation Operating 17 Plants on the Pacific Coast

San Diego Los Angeles San Francisco
Oakland Portland Seattle

When writing to Advertisers please mention this magazine.



Clinton

Electrically welded Wire Fabric

The Ideal Mesh Reinforcement for Concrete

Immediate Shipment from Stock
San Francisco
Los Angeles
Seattle

Wickwire Spencer Steel Corporation

SAN FRANCISCO
144 Townsend St.
Douglas 1421

LOS ANGELES
316 E. Market St.
Pico 4851

Recent

Office Buildings

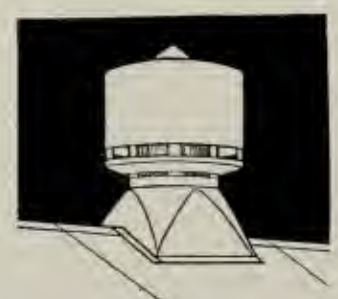
STANDARD OIL
SAN FRANCISCO

MATSON
NAVIGATION CO.
SAN FRANCISCO

CALIFORNIA STATE
LIFE INSURANCE
COMPANY
SACRAMENTO

Lindgren & Swinerton, Inc.

New Standard Oil Building
225 Bush Street
On the Sixth Floor



Robertson Ventilators Pull

Here are the reasons and proof why the Robertson Ventilator is the best manufactured:

150% to 160% more air exhausted through wind action, alone, than through an open pipe.

95% as good as an open pipe where there is no wind

Positively no back draft from winds deflected upward by sloping roofs because of the patented Robertson wind baffle—an exclusive feature.

Send for descriptive pamphlet and price list

H. H. ROBERTSON CO.

H. M. HOLWAY, District Manager
1007 Hobart Building, San Francisco
600 Metropolitan Building, Los Angeles

Lasting Smoothness!

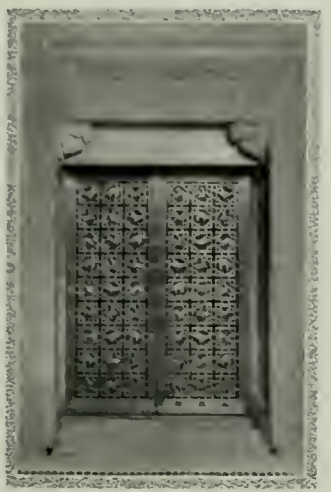
While it is an established fact that Southern Pine blocks on end will withstand hard wear indefinitely, Bloxonend is the only end grain flooring that combines durability with **lasting smoothness.** It is laid over concrete without embedding sleepers. Users include leaders in all industries.

Write for Specifications

Carter Bloxonend Flooring Co.

H. M. HOLWAY, District Manager
San Francisco: 1007 Hobart Bldg.
Los Angeles: 600 Metropolitan Bldg.
Portland: Cham. of Com. Bldg.

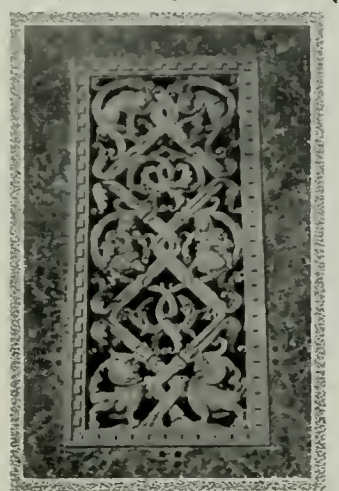
BLOXONEND
Lays Smooth—Stays Smooth



Doorway in entrance hall.
In harmony with the color tone of the cast bronze doors, is the marble of the jambs and surrounding walls. It is of St. Genevieve Golden Vein Marble, manufactured by Shipway Marble Company.

In the whole realm of modern stereotomy there are few examples of work more worthy of your careful study than the new Bowery Savings Bank on 42nd Street, New York City.

Here, York & Sawyer, who designed it, have drawn on ancient precept and so skillfully rendered it in modern materials, that it can safely be termed a masterpiece in stone.



High in the Mosaic walls of the banking room are pierced grilles of Napoleon Gray Marble.
These are for fresh air intake. Marble manufactured by Wm. Bradley & Son.

A Simple Tribute to a Great Work

To York & Sawyer belongs the credit for this beautiful building, the Bowery Savings Bank, New York City. Theirs is the mind that conceived it —theirs the guiding hand that brought it to completion.

But on those who hewed the timber and wrought the stone, shines a reflected glory. The complete building is evidence that their heart too, was in their work.

It is with a sense of pride that we point to that part of the work that was entrusted to our safekeeping.

TOMPKINS-KIEL MARBLE COMPANY

505 FIFTH AVENUE
NEW YORK CITY

DISTRIBUTORS MARBLE-STONE

CHICAGO
SAN FRANCISCO
SYLACAUGA, ALA.
KNOXVILLE, TENN.

BONDED FLOORS

California State Building, Civic Center, San Francisco, California. Bliss and Faville, architects. George B. McDougall, State of California Supervising Architect.

Over 10,000 square yards Bonded Floors Installed.

Union Oil Building, Los Angeles, California. Curlett and Beelman, architects. Over 11,000 square yards Bonded Floors Installed.

A five year Surety Bond with every floor.

Bonded Floors for Pacific Coast Buildings

Our service is now available throughout the Pacific Coast for furnishing silent resilient floors direct from manufacturer to user with one responsibility and one guarantee covering the five accepted divisions of resilient floors; viz:

Plain color Battleship Linoleum (U. S. Navy, Std.)
Cork Carpet (polished and unpolished).
Treadlite Tile (linoleum cork composition).
Rubber Tile (plain and marbleized).
Natural Cork Tile (standard grades and thicknesses.)

Ask for our specifications. They assure a high grade job yet give the opportunity for reputable competitors to bid.

All products made and sold under the famous ***Gold Seal*** Trade Mark.

BONDED·FLOORS·COMPANY
INCORPORATED
A DIVISION OF CONGOLEUM COMPANY, INC.

370 2nd St.
San Francisco

Offices in Principal
Cities of the U. S. A.

263 S. Los Angeles St.
Los Angeles

CALIFORNIA & HAWAIIAN SUGAR REFINING COMPANY
Crockett, California

An *Iron* That Meets Seacoast Conditions

Several hundred tons of light and heavy gage Armco Ingot Iron was used both for exterior and interior construction and equipment in the plant of the California and Hawaiian Sugar Refinery Company, erected in 1917.

ARMCO-Ingot Iron withstands the attack of corrosion. Even when exposed to salt-laden air, this durable **Iron** has a service life that makes it the most economical sheet metal to use.

Where to order ARMCO-Ingot Iron sheets: San Francisco Warehouse, Tenth and Bryant Sts.; California Cornice Works, Los Angeles; A. M. Castle Co. of Washington, Seattle; Spokane Sheet Metal Supply Co., Spokane.

ARMCO
TRADE MARK
INGOT IRON

The American Rolling Mill Co.

Middletown, Ohio

Evans Vanishing Door

Wardrobes are the practical and efficient installation for the saving of floor space, lowering the cost of construction and upkeep, and making for the convenience and sanitation of THE MODERN SCHOOL.

WARDROBES, Class F, made for plaster Backs and Ends, no Divisions, and with Evans Process Hollow Sanitary Door, hung on double pivoted arms, without guides, tracks or rollers, swing easily and silently. They cannot stick or bind. Made with or without Blackboards. Hardware can also be purchased separately.

More Than a Million Hang Their Wraps in Evans Vanishing Door Wardrobes

Trade Mark
VANISHING DOOR
U. S. Reg.

Catalog
"PICTURES THAT TALK"
Sent on Request

W. L. EVANS 700 Block B **Washington, Ind.**

Every Room Adds at Least $1,200 to the Cost of a Home or Apartment House

Hotel Cecil, San Francisco
Equipped with Wall Beds

Portal Wall Beds

are real space and cost savers. Those who would build wisely in these days of flunctuating prices, provide for PORTAL WALL BEDS.

MARSHALL & STEARNS CO.
WALL BEDS
"HIGHEST AWARD ALWAYS"

1152 Phelan Building
San Francisco

1774 Broadway
Oakland

D. L. JAMES HOUSE, CARMEL HIGHLANDS, CALIFORNIA
C. SUMNER GREEN, ARCHITECT

CORDOVA ROOF TILE

FURNISHED AND LAID BY

GLADDING, McBEAN & CO.

FOUNDED 1875

CROCKER BUILDING, SAN FRANCISCO

The Architect's first experience with Cordova Tile is a revelation. He is astonished to find how sympathetic a medium they become under his master hand. He has at his command harmonious colors ranging from chrome yellows through the russets and reds to a deep purple.

TROPICO POTTERIES, INC.
GLENDALE, LOS ANGELES
CALIFORNIA

It does not get hard—

Palmetto Twist Packing

It makes an ideal packing for Radiator Valves—may be unstranded to fit any size valve

H. N. COOK BELTING COMPANY

401-433 HOWARD ST. SAN FRANCISCO

Made in sizes of from 6 to 600 H. P.

RAY BURNER

For general heating and industrial use.

Ray Rotary Oil Burners

BURN

Low Priced Fuel Oil

Architects---Specify **BABY RAY** *Domestic Type Burner*

as it burns low priced Diesel Oil with high efficiency.
Especially designed for bungalows and dwellings.

POWER PLANT ENG. CO.
1933 5th Ave., Seattle

J. F. SHEA
2nd and Ankeny Sts.
Portland, Ore.

W. S. RAY MANUFACTURING CO.
118 New Montgomery St.
San Francisco
Plant:
Milton and Bosworth Sts.
San Francisco

W. S. RAY MFG. CO.
2442 San Pablo Ave.
Oakland

RAY OIL BURNER CO.
(of So. California)
831 Crocker St.
Los Angeles

JOHNSON'S ROTARY CRUDE OIL BURNER

Can be installed in any BOILER or FURNACE

Gives Satisfactory Results
Simple to Operate—Automatic—Safe
Let us tell you more about this Oil Burner.

BURNER IN OPERATION

S. T. JOHNSON CO.

1337 Mission Street
San Francisco
Phone Market 2759

940 Arlington Street
Oakland
Phone Piedmont 2815

Agencies: SEATTLE LOS ANGELES FRESNO SAN DIEGO SACRAMENTO

SIMPLEX
TRADE MARK

SIMPLEX BURNERS

For High or Low Pressure Boilers, Water Heaters, Kiln Dryers, Furnaces, Etc. Operated by Fractional H. P. Motors. Guaranteed for Efficiency and Durability.

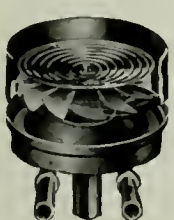
BUNTING IRON WORKS

1215 FIRST NATIONAL BANK BLDG.
SAN FRANCISCO Phone Sutter 3225

Factory Berkeley

Member of the Oil Burners Manufacturers' Association of California

Specify "ROTARY"—the Oil Burner with the Revolving Grate



Produces the highest efficiency in all standard furnaces, either steam, hot water or hot air, because of the short high temperature flame.

ROTARY OIL BURNER COMPANY, Inc.

159-12th STREET, OAKLAND PHONE OAKLAND 2994

GUARANTEED

OAK AND MAPLE FLOORING

Insist on "Higgins"—It Costs No More

J. E. HIGGINS LUMBER CO.
SAN FRANCISCO

If It's Hardwood—We Have It

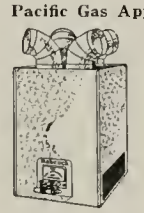
Heating the House by Touching a Button

THE
BABCOCK
"HIGH EFFICIENCY"
GAS FURNACE

warms homes and public buildings —conveniently. Burns gas, the cleanest fuel. Guaranteed for 5 years.

DISTRIBUTORS

Frank J. Klimm Co., San Francisco
Pacific Gas Appliance Co., Oakland
Beacon Light Company, Los Angeles
Southern California Gas Co., Los Angeles



BABCOCK
"HIGH EFFICIENCY"
GAS FURNACE

Manufactured by C. B. BABCOCK CO., San Francisco

Pump Governors
Oil-Burner Governors
Reducing Valves
Safety Valves
Oil Valves
Blow Off Valves
Boiler Feed Valves
Vacuum Pump Governors
Vacuum Regulating Valves
Oil Pumping Sets
Little Giant Improved
Oil Burners
Duplex Oil Pumps
Rotary Oil Pumps
Oil Heaters
Draft Gauges
Boiled Feed Pumps

G. E. WITT CO., Inc., Engineers

C. W. VAUGHN, President and Manager
MANUFACTURERS AND DISTRIBUTORS
862-864 Howard St. Phone Douglas 4404 San Francisco, Cal.

A. F. Edwards, Pres.
J. M. Fabbris, Vice-Pres.
J. A. Mackenzie, Secy.

Office Telephone Market 5070

Chas. F. Eisele, Asst. Mgr.
J. Rubiolo, Asst. Mgr.
D. A. Batsford, Asst. Mgr.

AMERICAN MARBLE & MOSAIC CO.

25-59 Columbia Square, San Francisco, Calif.
Near Folsom St., Bet. 6th and 7th Sts.
Factory on Water Front, South San Francisco. Phone South San Francisco 161

EST 1895

I F M 1922

the
ARCHITECT & ENGINEER

Contents

VOL. LXXV. NOVEMBER, 1923 Number 2

California Commercial Union Building, San Francisco - - - - - - - - - - - *Frontispiece*
Geo. W. Kelham and Kenneth Macdonald, Jr., Architects

Recent San Francisco Skyscrapers - - - - - - 51
Irving F. Morrow

Mechanical Equipment of Hotels - - - - - - 85

The Making of an Architect - - - - - - - 86

Clay Products in Recent Skyscraper Design - - 89
F. S. Laurence

Better Architecture Competition - - - - - - 98

Some Advantages of Stucco - - - - - - - - 101
P. A. Malone

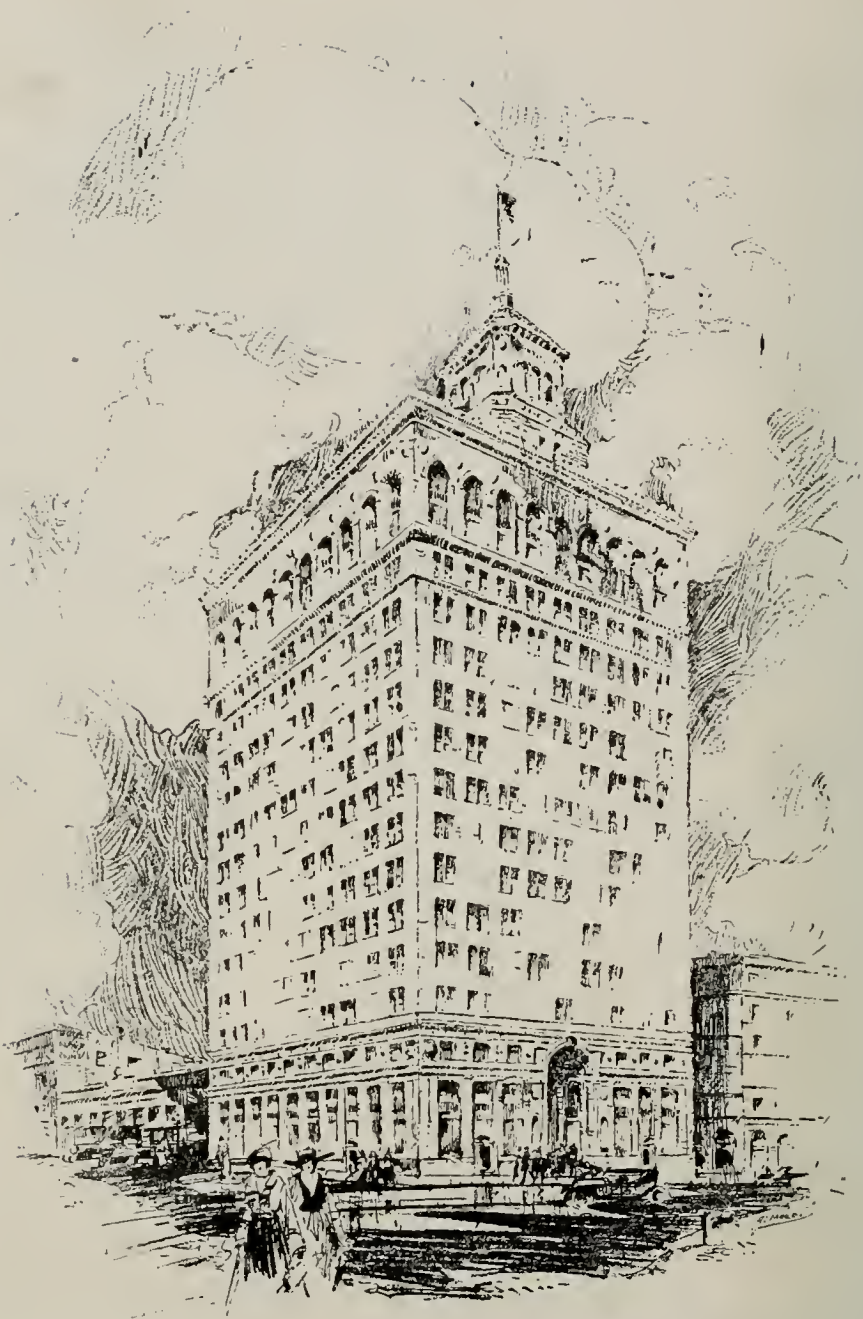
The Church at St. Leu d'Esserent - - - - - - 103
R. H. Bickel

Heavy Duty Floors for Industrial Buildings - - 104

Building Methods Primitive - - - - - - - - 105

Editorial - - - - - - - - - - - - - - 106

Published Monthly by
THE ARCHITECT and ENGINEER Inc.
626-627 Foxcroft Building-San Francisco
W J L Kierulff, President — Frederick W Jones, Vice-President — L B Penhorwood, Secretary



CALIFORNIA COMMERCIAL UNION BUILDING, SAN FRANCISCO, GEORGE W. KELHAM AND KENNETH MACDONALD, JR., ASSOCIATED ARCHITECTS

Frontispiece
The Architect and Engineer
November, 1923

SAN FRANCISCO
PUBLIC LIBRARY

THE
ARCHITECT
AND
ENGINEER

NOVEMBER
1923

VOL. LXXV.
No. 2

Recent San Francisco Skyscrapers

By IRVING F. MORROW

WHEN you overhear conversation in public places you ordinarily encounter but two subjects of discussion—business and automobiles. But on the west end of a San Francisco ferry boat this extreme conversational paucity is relieved at least to the extent of approbation of the city's mobile skyline. "Well, she sure is changing these days," they ejaculate; and the tone of satisfaction implies that change is the thing which is most to be desired of a city. Uncritical minds are so ready to identify movement with progress. Pride in the city's silhouette might be more comprehensible if it were more discriminating; but apparently character and aesthetic quality are quite secondary to the mere fact of change. To the man in the street—or on the ferry boat—one tall building is as good as another of equal height; indeed, the most important thing about any of them is the number of stories.

But, leaving to the side such controversial questions as the virtue of mere change as change, the fact remains that the city's skyline has recently been altering at an impressive rate. San Francisco's first structure of skyscraping aspirations was the original Chronicle building, built I really know not when, but belonging to the last generation. Skyscraping is after all largely relative, and the building towered above the prevailing two or three story level of its time perhaps even more authoritatively than the Standard Oil building above the higher general level of today. Its battlemented Romanesque tower raising four large clock dials above the level of the roofs was the outstanding architectural landmark of the San Francisco of my early childhood. I recall this feature as one of considerable picturesqueness, an impression, however, which I have not recently checked by reference to old pictures. It was destroyed in the conflagration of 1906, and not rebuilt when the structure was subsequently rehabilitated. Its omission left many

features of the building's composition not entirely explicable; but it is true that higher structures were already climbing into the space around it, and a clock tower ten or eleven stories high would now lack the significance it possessed in earlier days.

The first high building in San Francisco bearing a stamp still recognized as distinctively modern was Messrs. Reid Brothers' Claus Spreckels building. I can recall that the construction of this building was an event. It was probably built with a weight and solidity in excess of the current practice of today, and it withstood both earthquake and fire in the catastrophe of 1906. It stood as an isolated and unobstructed monument, and its crowning dome, architecturally conscious throughout its entire height, gave it a dignity and a disinterestedness impossible to a structure terminating in a cornice and flat roof with haphazard utilitarian penthouses superadded. It is true that when high structures multiply to the point where they become architecturally competitive, the conspicuousness, and hence the significance, of such special terminal composition diminishes. It might be fantastic, as well as impractical, to suggest that all high buildings on small areas end in domes. For

San Francisco Skyline from Telegraph Hill

a long time it was customary to play that nothing above the cornice could be seen. The designers of the more significant recent skyscrapers are returning to the point of view evidenced in the earliest examples in so far as they recognize the necessity of adequate termination, and various solutions have been offered which we must admit, perhaps, are more pertinent to modern conditions than the dome. We may have to agree that the Claus Spreckels building is not the most legitimate model for current practice, but we are none the less grateful that there was a time when it was possible and even logical. It satisfied its purpose with distinction; and, as always with things which are conspicuously right for their time and place, it continues to bear the mark of authenticity. It is one of the city's classics; along with the Crocker building perhaps the most vital.

Skyscrapers of greater or less worth continued to follow in San Francisco intermittently. I refrain from attempting so much as a list of names, for, once we have left behind the Claus Spreckels building, we seem plunged into an actuality where even an omission might be a cause of offense, while anything approaching a detailed survey of even the most outstanding examples would be impossible. The last three or four years, however, have seen a sudden building activity which has given us the most interesting of our high structures.

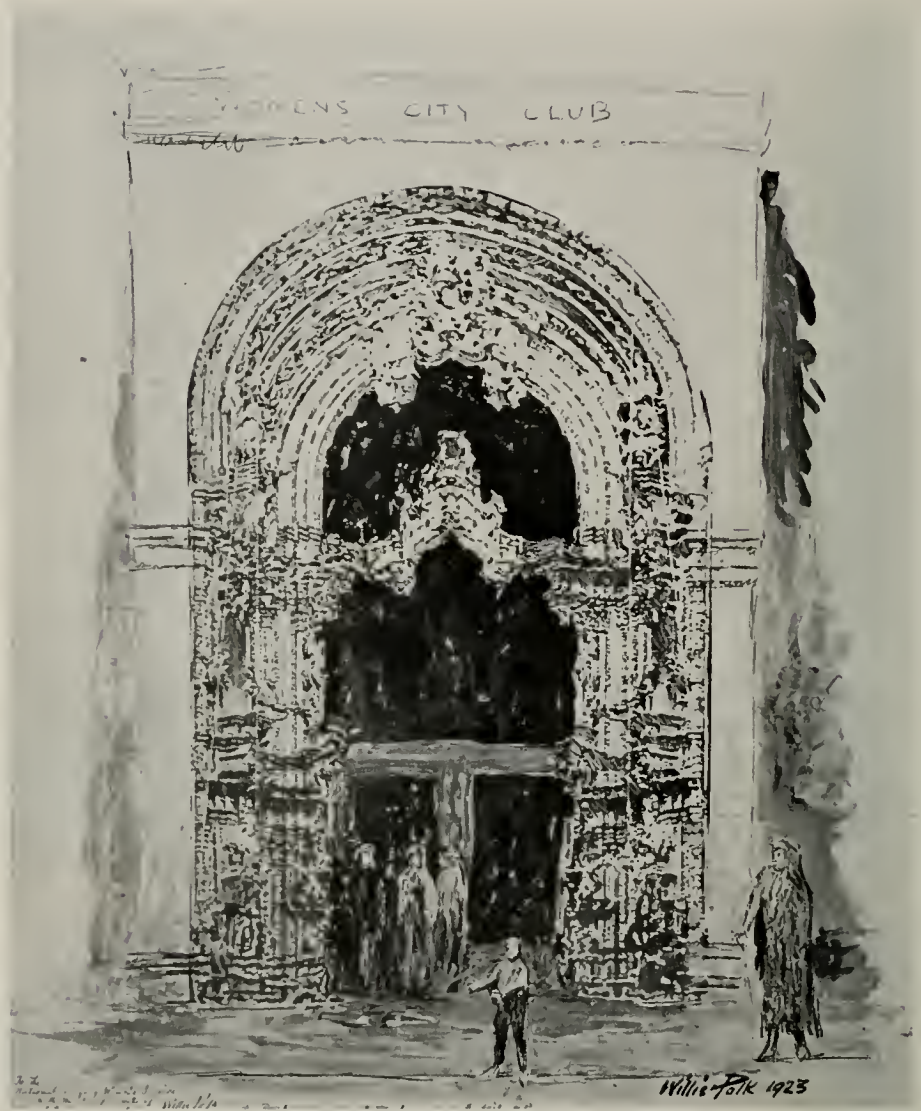
By no means the largest, but unquestionably one of the best conceived and executed of these is Mr. Hobart's Alexander building. The lot is small, and taller neighbors lie in fairly close proximity; for which reasons it passes unnoticed by those for whom architectural interest is a function of bulk and number of stories. It is none the less an unusually graceful and appropriate composition. I regret the thinness of reveal in the large arches of the upper section; a few more inches would have meant an immense gain in reality. The detail, if not distinguished, is appropriate in scale and character. It performs a real function unobstrusively; which is perhaps just what should be expected of the detail of commercial structures. It rises easily, quietly, without obstruction, from base to parapet. The treatment of the corners is wholly admirable, and would of itself serve to distinguish it among the city's skyscrapers. No mathematical intersection of four vertical planes here, with the dryness and uneasy sense of overhang that accompany such uninspired geometry; but a gradually, sensitively, ingeniously modulated chamfering of the corner, which softens the harshness of the edge, and produces just enough illusion of receding

San Francisco Skyline from the Bay

planes to give a grace and poise unknown in any of the city's other high structures. It is an excellent idea artfully executed.

Mr. Kelham's four buildings have the virtues that derive from clarity of thought, fastidiousness of selection, and care in study (compilation). They are perhaps more distinctively commercial accomplishments than aesthetic ones; a statement made more as definition of kind than as assessment of value. The Balfour building's tall shaft of rose-colored brick is a pleasant deviation from the prevalent white, gray, and buff of serious buildings. The handling of base and cornice, the forms and detail of lobby, urge with gentlemanly insistence that business is not necessarily an uncultured occupation.

The California Commercial Union building, by Messrs. Kelham and Kenneth MacDonald associated, asserts even more impressively the claim of modern business to the culture and magnificence of the past. Inside and out one is confronted by a disinterested luxuriousness which is thought-provoking. To what extent is sheer architectural display consonant with the purpose and conditions of modern commercial building? What, for instance, of the spacious colonnaded area behind the elevator lobby proper? What of the loggia belvedere surmounting the center of the main facade? This last feature—at least by far its greater bulk—



ENTRANCE TO WOMEN'S CITY CLUB, SAN FRANCISCO
Willis Polk & Co., Architects

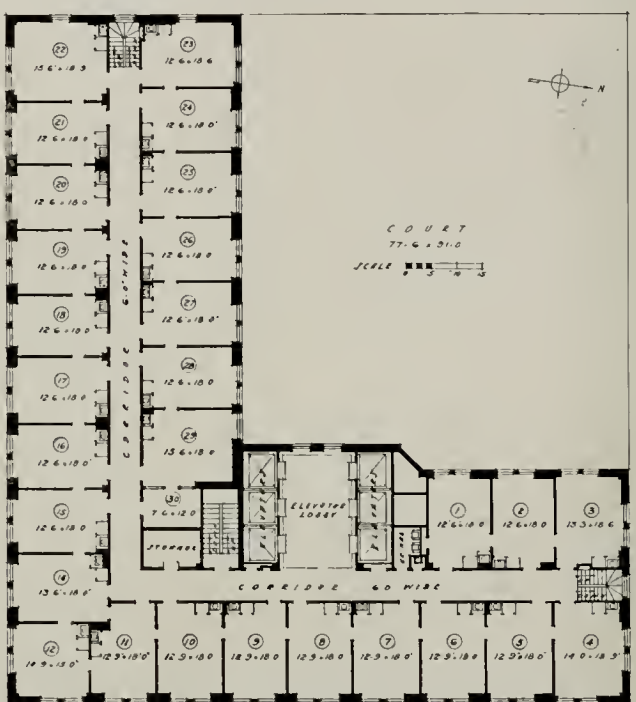
is not an artistic mask for unsightly necessities, because it is entirely open. It is a decorative element. Its only utility is aesthetic. Put aside the question of the commercial warrant for pure decoration so costly, and consider what architectural justification it can offer. The building lies on narrow streets, hemmed about by other high structures, in a district destined to further skyscraper development. The belvedere is situated, not at the corner, where it might be glimpsed up and down two streets, but on the center of the side which fronts on the narrower street. It lies so high that it is practically invisible in sharp perspective along the street; no street or open space faces it, and buildings inter-

PHYSICIANS' BUILDING, SAN FRANCISCO
(See Plan Page 64)
Geo. W. Kelham, Architect

vene to conceal it from nearby streets. The few isolated points of vantage from which it is visible are subject to being blocked at any time. It can be seen from the hills at the back, from which points of view its relation to the L plan of the building leaves it architecturally unsatisfying. The one viewpoint from which it produces anything like the effect it doubtless has on drawings is the bay, in particular from the waterfront north of the Ferry building. Now here is the question I cannot refrain from pressing: Is an architectural display of such importance justified solely for commuters on the Sausalito ferry boats? In short, this feature is an eloquent example of a prevalent architec-

tural fallacy—the assumption that architectural elaboration is its own justification, without reference to the normal position (and probable mood) of the observer. Only religious devotion or a faulty appreciation of reality could lavish so much effort and expense at a point which can be so little realized. It brings to mind the old controversy as to the legitimacy of painting on vaults and ceilings. And yet this is a charming belvedere, when it can be seen.

The Standard Oil building is not only Mr. Kelham's most important work; it is, after due allowance for any and all legitimate strictures, an achievement of genuine importance. It may be pointed out with justice that the heavy corbeled cornice is a logical termination, from



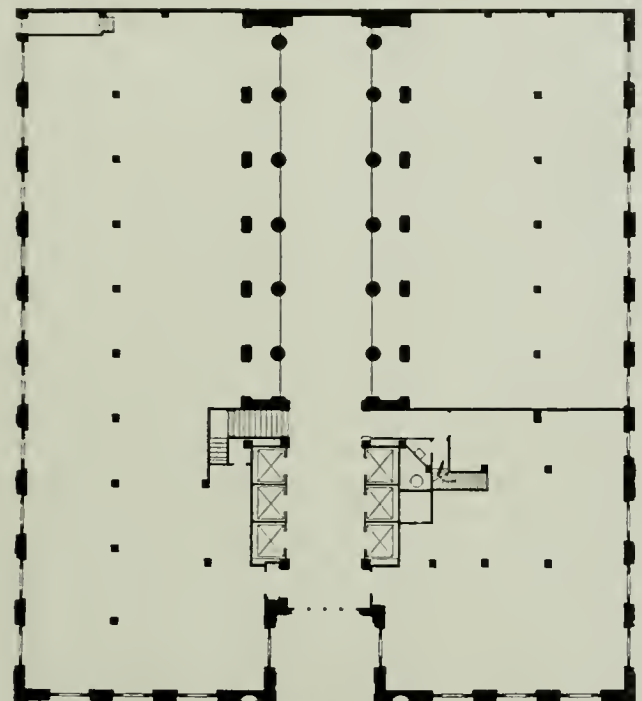
TYPICAL FLOOR PLAN, CALIFORNIA COMMERCIAL UNION BUILDING, SAN FRANCISCO
Geo. W. Kelham and Kenneth MacDonald, Jr., Associated Architects
(See Page 66)

which the building appears to take a fresh start. It may be questioned if it was necessary to render the whole composition in a consciously self-denying gray (imagine it in glowing rose and amber!). Technically, one may quibble with the essentially stony handling of the large masses of terra cotta. For all its frigidity and tightness, the building none the less contrives to convey authority of overpowering mass, the vigorous pomp of restrained opulence, the thrill of soaring hight. It is doubtless destined for some time to come to dominate the city's commercial architecture.

It is too early to make full comment on Mr. Kelham's Physicians building, which we have as yet only in drawing. It appears to be a projection, without essential diminution, of the enthusiasm which went into the Standard Oil building.

Messrs. Bliss and Faville's Matson building is quiet, unassuming, straightforward. It concedes to business a natural desire for legitimate adornment, without ascribing to it any specious altruism or glamour. The use of slight modeling and flat color is logical and interesting on a facade which receives little sunlight, and hence enjoys limited shadows. The terra cotta, on the whole, avoids being stone masonry. It is regrettable that the photographs were of necessity taken before the building's completion; in particular the red paint on the metal cornice makes this member count for much more than its true weight.

Of Messrs. Bakewell and Brown's Pacific Gas & Electric building I speak with more caution, because we have to date only drawings and



GROUND FLOOR PLAN, CALIFORNIA COMMERCIAL UNION BUILDING, SAN FRANCISCO
Geo. W. Kelham and Kenneth MacDonald, Jr., Associated Architects
(See Page 66)

models upon which to base a judgment. Such data as we possess suggest a composition of power and dignity, but unnecessarily, even unnaturally stony. (I am probably safe in assuming that shaft and top, at least, will not really be of stone.) The clever composite photograph of the model in conjunction with the actual Matson building adjoining may show the former somewhat unnaturally over-lit. It none the less suggests more aesthetic sophistication and aggressiveness than its neighbor; which may be counted a gain in "pep" by the man in the street, but by the more thoughtful can not but be recognized as a loss in real frankness.

Messrs. Reid Brothers' Fitzhugh building on Union Square is a not inharmonious continuation of the spirit of the St. Francis Hotel which occupies the adjoining end of the square. It takes its place with

sufficient definiteness, and some pretention. One may question the somewhat arbitrary disposition of balconies. It is regrettable here too that photographs had to be taken before the completion of work.

San Francisco has not been alone among the Bay communities in the recent activity in commercial building accessions; and Messrs. Reed and Corlett's tower addition to the Oakland Bank is as distinguished as any comparable work in the larger city. Progress photographs suggest hardly more than the grace and the satisfying fenestration of the tower. The building deserves more detailed consideration on the completion of the still unfinished alterations to the original structure designed to bring it into proper relation with the new. The enlarged banking room promises to be an interior of unusual distinction when completed. It is worthy of note that the tower is finished uniformly on all four sides.

I have so far considered these examples of recent commercial architecture almost entirely from what might be termed an academic point of veiw. This is commonly recognized as all that is required, if not more. Architectural criticism sinks in popular (and professional) esteem to a polite and "ethical" adjunct of salesmanship. Yet I cannot refrain from ending on a serious question, even while recognizing the impossibility of attempting an immediate answer, let alone a discussion of its remoter implications.

Our college art courses tell us that architecture symbolizes the history and currents of thought of its age. Does it? What is there in these buildings, aside from the mechanical ability to construct with such lightness to such heights, that is at all contemporaneous. At a time when humanity is distraught as almost never before, suffering, groping, losing old faiths without the acquisition of new, these structures bear no more penetrating message than the sanctity of property and the stability of investment. Perhaps it is mistaking the nature of this symbolism and the manner of its manifestation to expect an art so positive, so objective as architecture to register spiritual uncertainty. Perhaps, in a certain sense, it may be regarded as having fulfilled its interpretative function in ministering, among conflicting possibilities, to the still dominant motive force. Let us pass over for the moment the evasive question of spiritual interpretation, and inquire into the relation of these buildings to their more specific physical conditions. They are constructed one and all of articulated frames which support structurally negligible curtain walls; yet they simulate almost without exception self-sustaining masonry. The surface finish is in most cases terra cotta, which shows no recognition of its facile plastic freedom, but simulates the laborious rigidity of the technique of cut stone. Perhaps the majority of them have cornices of stamped sheet metal; yet even in a matter so simple there has been not a single example of an effort to escape forms long ago developed for cut stone, and seek fresher expression derived from the new medium of execution. Throughout their composition and handling they are subservient to past structural and decorative ideals.

But perhaps this is all as it should be. Is it not possible that the interests which they celebrate and serve are animated principally by past spiritual ideals?

ELEVATOR LOBBY, BALFOUR BUILDING, SAN FRANCISCO
GEORGE W. KELHAM, ARCHITECT

(See Plan, Page 65)

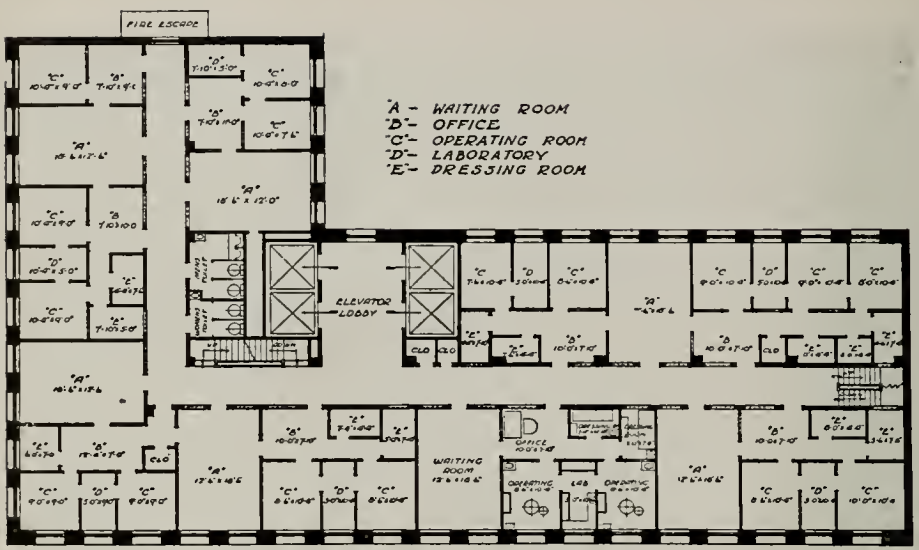
BALFOUR BUILDING, SAN FRANCISCO
GEO. W. KELHAM, ARCHITECT

BALFOUR BUILDING, SAN FRANCISCO
GEO. W. KELHAM, ARCHITECT

(See Plans, Page 64)

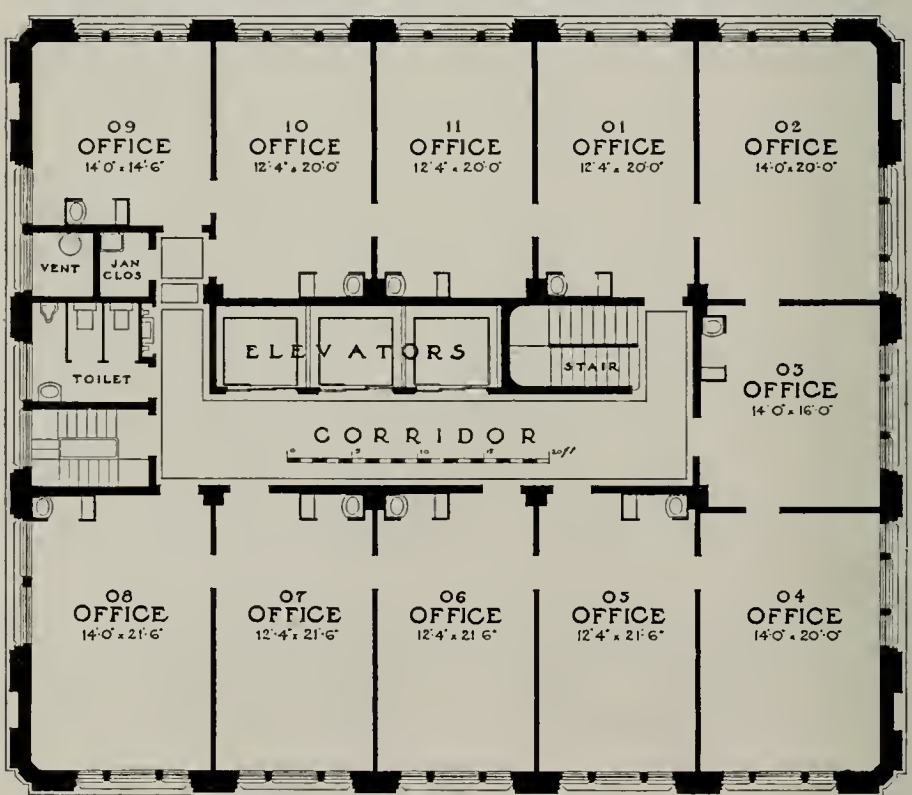
ALEXANDER BUILDING, SAN FRANCISCO
LEWIS P. HOBART, ARCHITECT

ALEXANDER BUILDING, SAN FRANCISCO
LEWIS P. HOBART, ARCHITECT



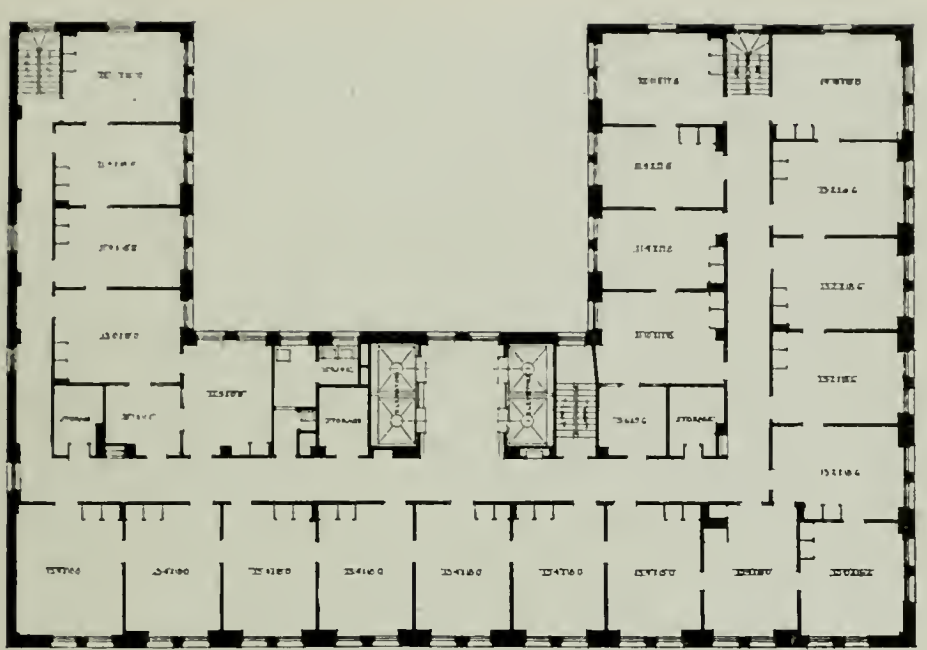
TYPICAL FLOOR PLAN, PHYSICIANS' BUILDING, SAN FRANCISCO

(See Page 55) Geo. W. Kelham, Architect

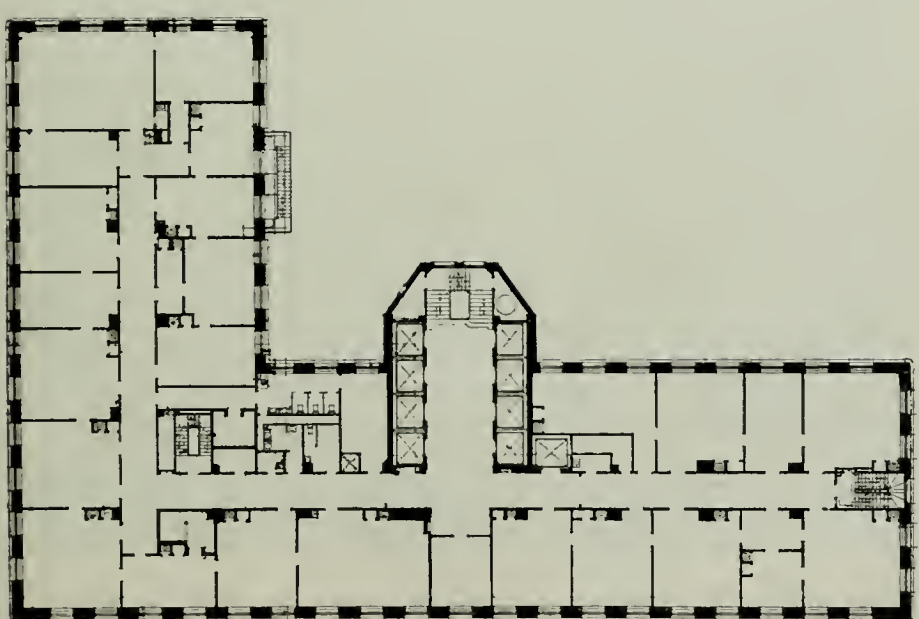


TYPICAL FLOOR PLAN, ALEXANDER BUILDING, SAN FRANCISCO

(See Pages 62-63) Lewis P. Hobart, Architect



TYPICAL FLOOR PLAN, BALFOUR BUILDING, SAN FRANCISCO
(See Pages 60-61) Geo. W. Kelham, Architect



TYPICAL FLOOR PLAN, STANDARD OIL BUILDING, SAN FRANCISCO
(See Pages 70-71) Geo. W. Kelham, Architect

CALIFORNIA COMMERCIAL UNION BUILDING, SAN FRANCISCO. GEORGE W. KELHAM AND KENNETH MACDONALD, JR., ASSO. ARCHITECTS

(See Plans, Pages 56-57)

SAN FRANCISCO
PUBLIC LIBRARY

CALIFORNIA COMMERCIAL UNION BUILDING, SAN FRANCISCO, GEORGE W. KELHAM AND KENNETH MACDONALD, JR., ASSOCIATED ARCHITECTS

ELEVATOR LOBBY, CALIFORNIA COMMERCIAL UNION BUILDING, SAN FRANCISCO
GEO W. KELHAM AND KENNETH MACDONALD, JR., ASSOCIATED ARCHITECTS

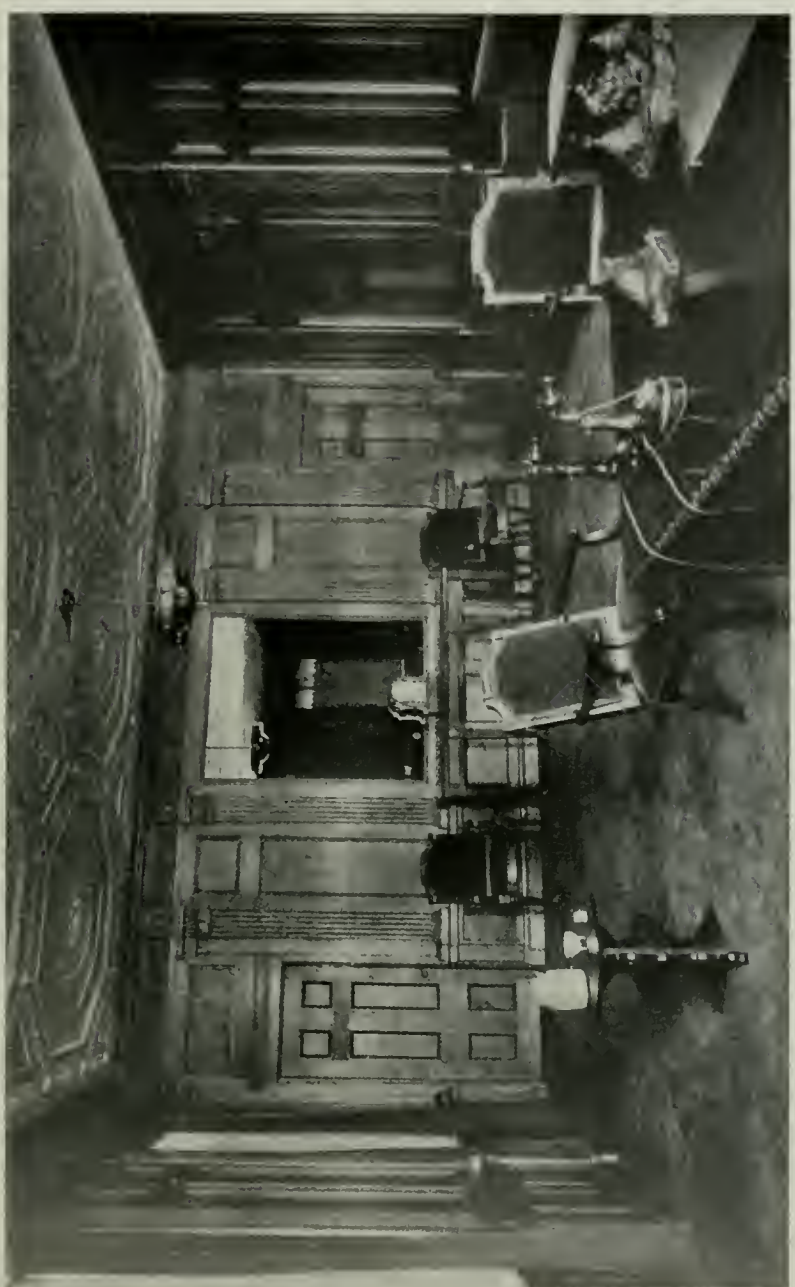
ENTRANCE, STANDARD OIL BUILDING, SAN FRANCISCO
GEORGE W. KELHAM, ARCHITECT

STANDARD OIL BUILDING, SAN FRANCISCO, FROM THE FRONT
GEORGE W. KELHAM, ARCHITECT

(See Plan, Page 65)

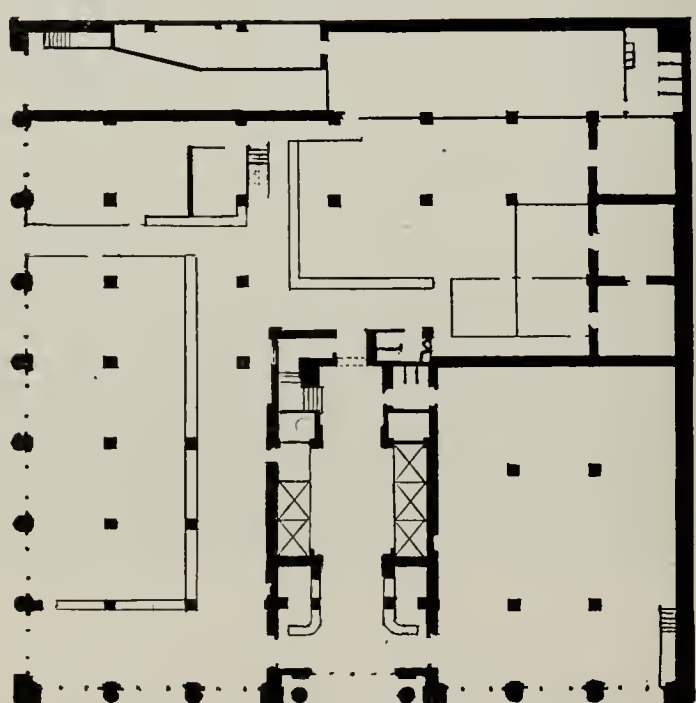
STANDARD OIL BUILDING, SAN FRANCISCO, FROM THE REAR
GEORGE W. KELHAM, ARCHITECT

ROOF GARDEN, STANDARD OIL BUILDING, SAN FRANCISCO
GEORGE W. KELHAM, ARCHITECT



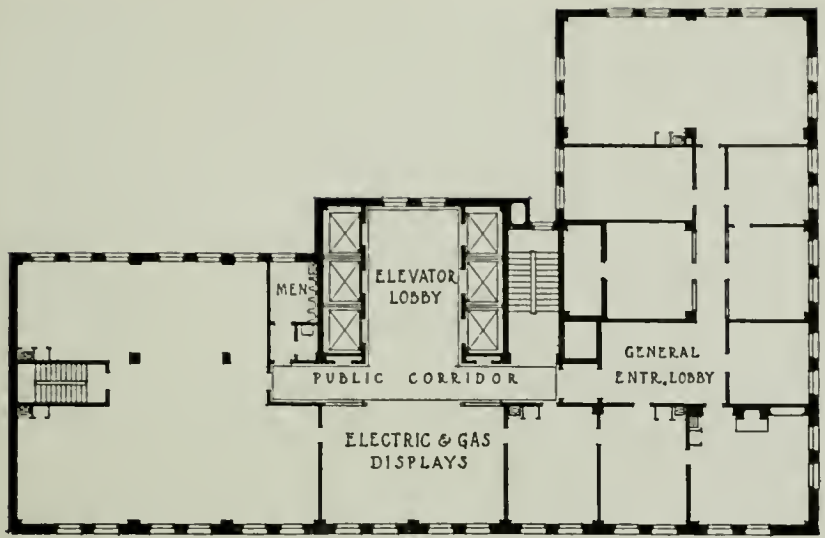
PRESIDENT'S OFFICE, STANDARD OIL BUILDING, SAN FRANCISCO
GEORGE W. KELHAM, ARCHITECT

TYPICAL FLOOR PLAN

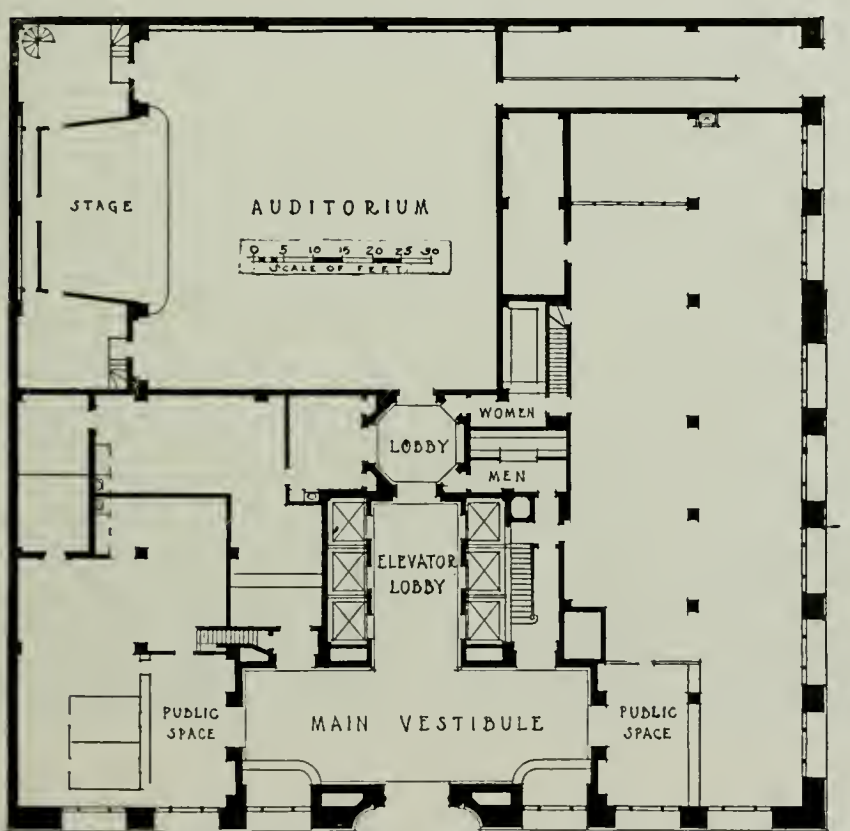


GROUND FLOOR, MATSON BUILDING, SAN FRANCISCO
Bliss & Faville, Architects

(See Page 76)



TYPICAL FLOOR PLAN



GROUND FLOOR PLAN, PACIFIC GAS & ELECTRIC BUILDING, SAN FRANCISCO

(See Page 77)

Bakewell & Brown, Architects

A. A. Brown, Construction Engineer
(See Plans, Page 74)

MATSON BUILDING, SAN FRANCISCO
BLISS & FAVILLE, ARCHITECTS

(See Plans, Page 75)

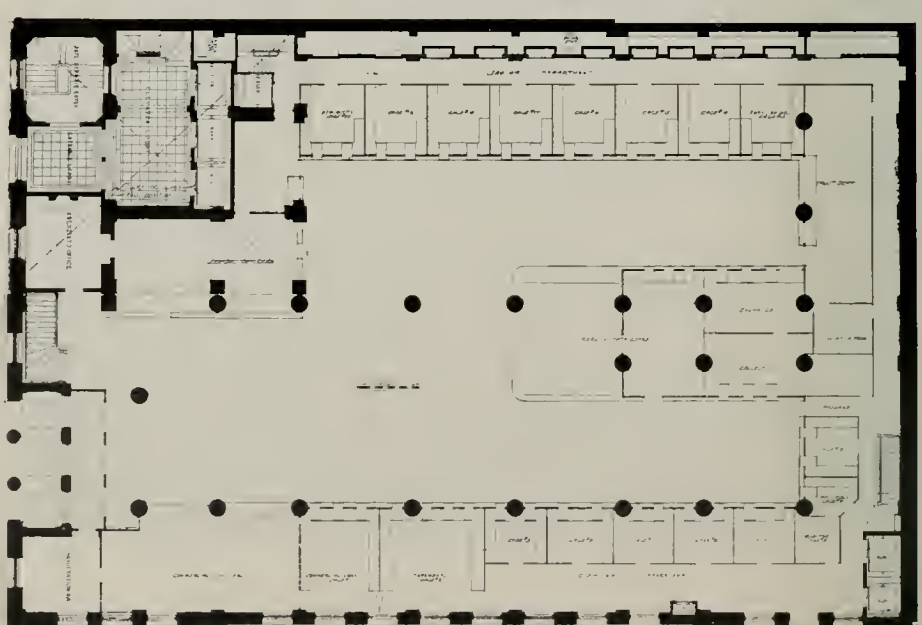
PACIFIC GAS & ELECTRIC BUILDING, SAN FRANCISCO
BAKEWELL & BROWN, ARCHITECTS

TOWER TO THE OAKLAND BANK, OAKLAND, CALIFORNIA
REED & CORLETT, ARCHITECTS

(See Plans, Page 80)

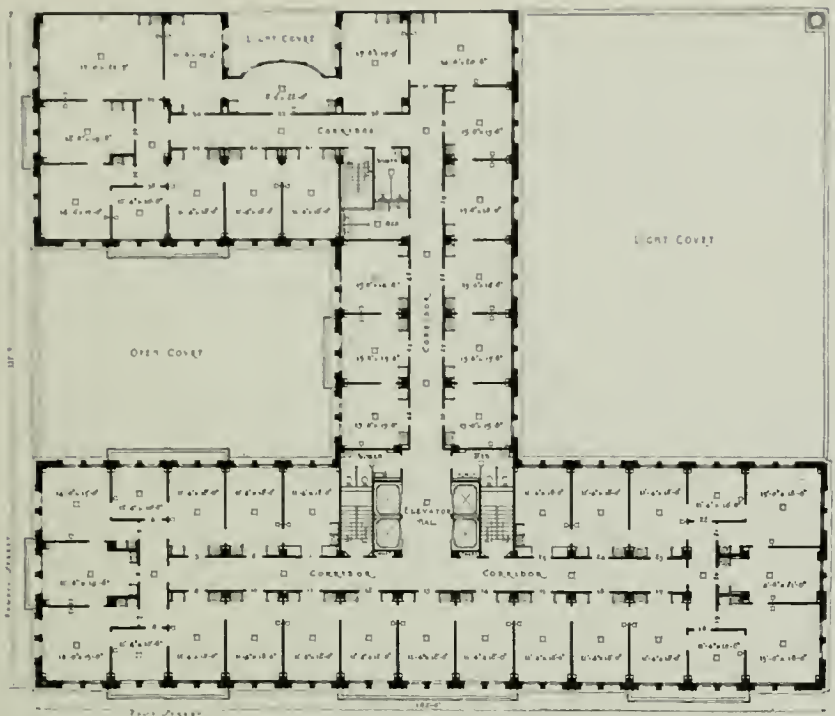
TOWER TO THE OAKLAND BANK, OAKLAND, CALIFORNIA
REED & CORLETT, ARCHITECTS

PLAN OF TOWER IN CONJUNCTION WITH ORIGINAL BUILDING AND PLAN OF TYPICAL TOWER FLOOR

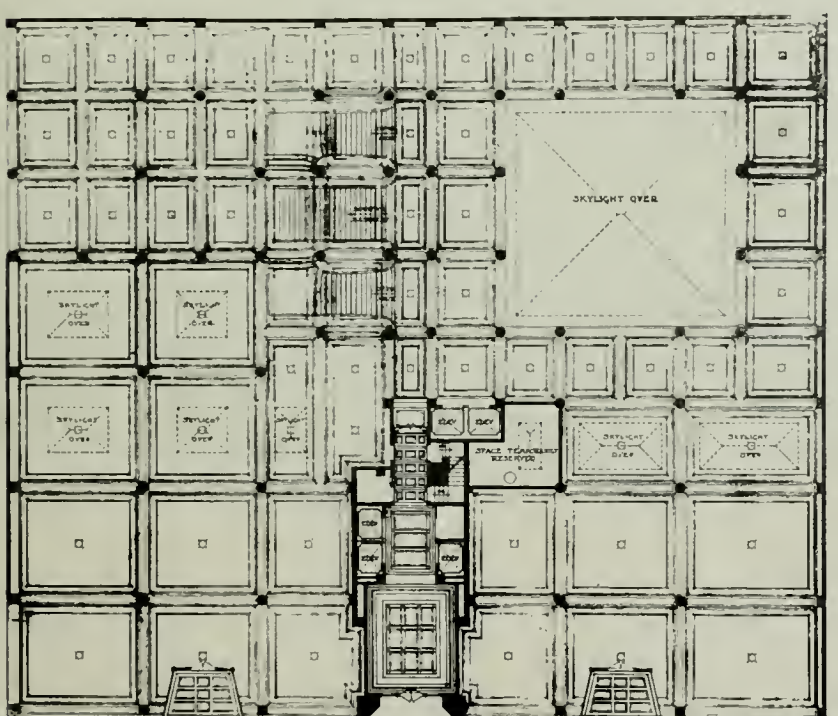


GROUND FLOOR PLAN, OAKLAND BANK, OAKLAND, CALIFORNIA
Reed & Corlett, Architects

(See Pages 78-79)



TYPICAL FLOOR PLAN



GROUND FLOOR PLAN, FITZHUGH BUILDING, SAN FRANCISCO

(See Pages 83-84)

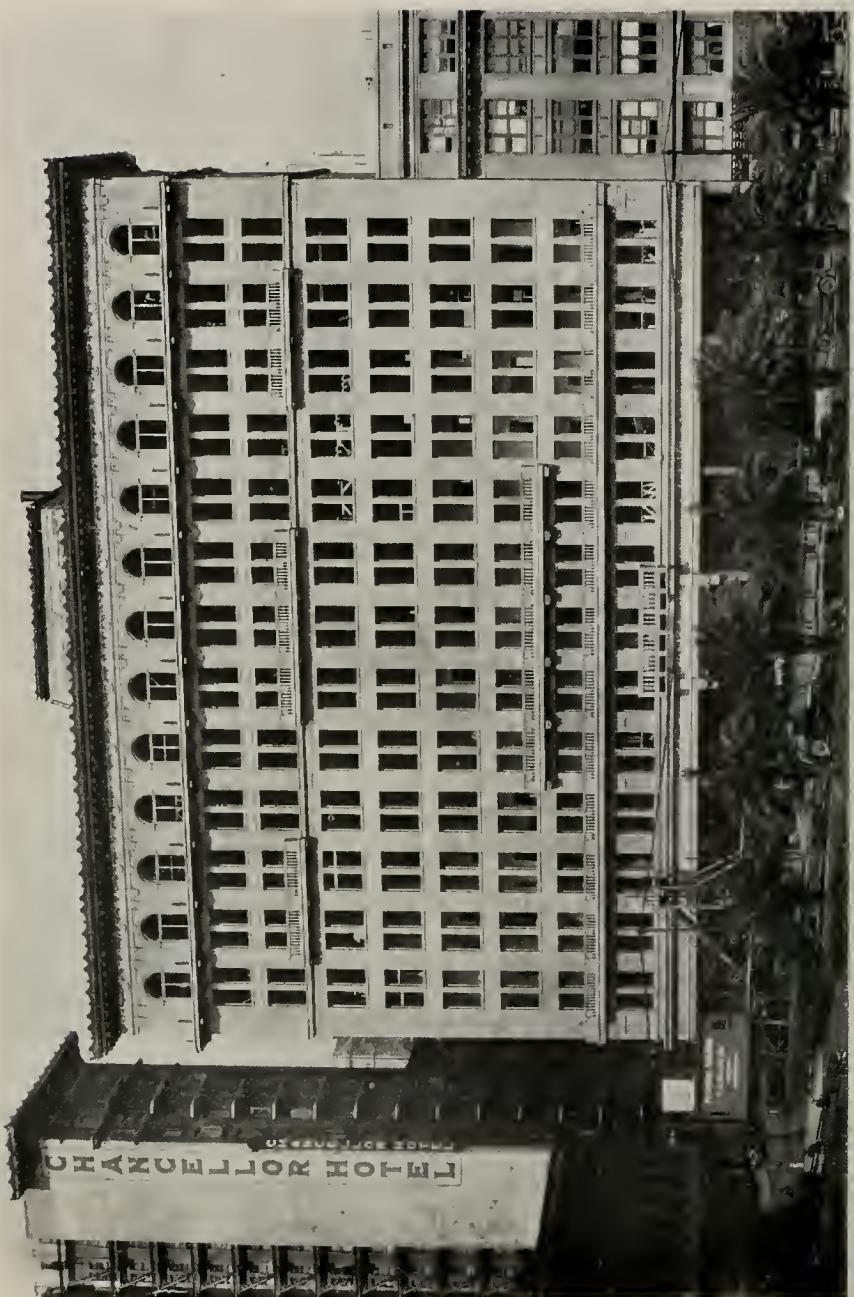
Reid Brothers, Architects

ARCHITECTS' PERSPECTIVE, CLAUS SPRECKELS BUILDING, SAN FRANCISCO
REED BROTHERS, ARCHITECTS

The City's First Real Skyscraper

ARCHITECTS' PERSPECTIVE, FITZHUGH BUILDING, SAN FRANCISCO, CALIFORNIA
REED BROTHERS, ARCHITECTS

(See Plans, Page 81)



FITZHUGH BUILDING, SAN FRANCISCO
REID BROTHERS, ARCHITECTS

The Mechanical Equipment of Hotels

Its Relationship to the Total Cost of the Building

DO architects as a whole appreciate the relative importance and cost of the mechanical work for plumbing, heating, ventilating, electric wiring, laundry equipment, etc., in investment buildings? The majority undoubtedly do, but apparently only a few give it the office attention its initial cost justifies or its ultimate importance makes imperative.

Architects fully realize the importance and value of the steel framing and, as a rule, give it proper attention. Yet tho plumbing installation, the elevator equipment or the ventilating system seldom receive their share of his attention and are usually accepted as recommended by the mechanical engineer. It is not expected that an architect should have the knowledge necessary to cope with the details of specialty problems but it is essential that he should know the relative costs, values, and importance of the principal equipment in order to complete his store of information indispensible to an efficient development of all investment projects.

The analyses of many different types of buildings develop startling figures as to the importance and cost of mechanical equipment when compared with those of other necessary parts. We find this equipment responsible for 20% to 35% of the total net cost of many modern fireproof investment buildings such as lofts, offices, apartments and hotels. Naturally, the individual item cost varies for each type and class but the fact to be realized is that the total percentage in any case is much greater than many seem to appreciate.

Consider these facts. The plumbing in the average modern fireproof hotel will cost approximately the same as the steel frame. The heating and ventilating equipment for this building will just about equal in cost the face brick curtain walls having a fair share of limestone ornamentation. The interior marble work will hardly exceed the cost of electric wiring, nor will the interior doors, trim, etc., exceed the cost of an efficient elevator installation. The equipment for the kitchen and laundry will demand a greater expenditure than a normal amount of sheet metal work.

The following table presents the low and high percentages of net cost for mechanical equipment for several hotels. Naturally, none conform in detail to the low or high list. For example, a hotel only a few stories high with a bath for every room will be high in plumbing but low in elevator cost. Much of the equipment depends upon the class of hotel under consideration. However, the table presents general averages that should impress us with the importance and cost of the mechanical equipment when compared with the other material required in their construction.

Plumbing	7.0%	to	11.0%
Heating and ventilating	5.0%	"	9.0%
Electric wiring and fixtures	3.0%	"	4.0%
Elevators	3.0%	"	5.5%
Refrigerating Plant	.5%	"	1.2%
Laundry Equipment	.2%	"	.3%
Kitchen Equipment	.3%	"	.5%
Finishing Hardware	1.0%	"	1.5%
Miscellaneous	0.0%	"	2.0%
	20.0%	"	35.0%

While the above table is compiled from hotel data, analyses of relative cost of other types of investment buildings produce equally impressive results. It is a poorly equipped and an inferior class of office, loft or apartment buildings which shows mechanical equipment costing less than 18% of the net cost of all labor, material and equipment. Subnormal equipment very often nullifies the value of other superior qualities and generally reacts harmfully on both rental value and operating expense. The saving of 1% in building cost by the installation of an inferior elevator equipment or an inadequate service may prove not only expensive in annual operation but may easily lower the income. Immediately upon the completion of buildings of every type there is daily evidence that the equipment directly affects both the operating cost and the building's reputation.

As a rule, so much time is spent on plans and architectural design without any preliminary consideration for the equipment installation that often investors are actually proceeding with their operation without adequate facts concerning their equipment requirements. When we consider that this equipment, unlike much of the other material used, is constantly affected by use and that its maintenance and operation absorb a large percentage of the annual operating cost, we should be doubly impressed with its value and its relation to the ultimate worth of the building.

While the architect's efficiency in planning may produce the estimated gross income, his apathy in dealing with the mechanical equipment may not only increase the initial cost but also the expense of operation and thus to a greater extent than is usually appreciated, tend to decrease the otherwise satisfactory ratio of income to cost.—American Architect.

* * * *

The Making of an Architect

THOUGH it is true, in a sense, that architects are born, not made, it is equally true that even the best material requires a great deal of development.

Perhaps the most important fact to be grasped is that architecture is **not** something merely to be **learned.** In the opening sentence on this page the emphasis has been placed advisedly upon development.

There is a threefold purpose in any thoroughly good course of architectural training. Naming the least important purpose first and the most important last, we may make the following division: One purpose is the acquisition of the knowledge that is a necessary tool for the architect. Another purpose is the formation of a habit of proper procedure in attacking problems in architectural design. The third purpose is the development of appreciation and of the power to create in terms of architecture. One should **know** architecture, but to **be** an architect means this and a great deal more.

Whether one gains the knowledge, the habit and the development entirely in office work or through school work, supplemented by office experience is immaterial, though, excepting in rare cases, the conditions for proper training are not found in office work alone. Actual contact with good, old buildings in this country and abroad is very valuable and travel has a broadening effect. A traveling scholarship is well worth working for.

The courses offered by the recognized architectural schools and by

the ateliers are open to practically everyone, and are designed to accomplish the threefold purpose described above. The program of the Beaux-Arts Institute of Design, which is incorporated in most of the courses in architecture and followed in the ateliers, is planned to train the student in all these ways.

As supplementary training, each student ought to secure for himself in his free time as great a development as possible of his sensibilities and of his power to think clearly. Attendance at the opera and at concerts and visits to picture galleries in the season make him more sensitive to beauty and more receptive of the messages embodied in art forms. In the summer, tramping and sketching in the country, among the hills and in the forests; opening himself to an appreciation of the beauty of nature and to a comprehension of the inevitable sequence of cause and effect in nature's workings will give him invaluable development and will help him to maintain the splendid state of physical health that is a prerequisite to really effective study or work.

We have spoken of the opera and the picture galleries, but the musical comedy and the ball game have their proper place in the scheme —as has everything else that tends to normality.

Among the essentials of an architect's equipment is a grasp of the relation of the arts—more especially of architecture—to human life. Part of this he will get from a study of history in connection with a study of the architecture of the past, part of it, the modern part, he will get from current literature and from everyday contact with people.

Architecture more than any other art has traditions, and they are invaluable as points of departure and as safeguards. The intelligent study of architectural documents, books of plates of measured drawings of the best old work, particularly such books as d'Espouy's "Fragments d'Architecture Antique," "Architecture Toscane," by Grandjean de Montigny et A. Famin, and other books of recognized authority is invaluable.

Architecture has to solve practical problems and to find its expression by means of construction in a great variety of materials. The matter of practical requirements is one of the greatest importance. An architect must know how a particular family lives in order to design a house for that family, whether they eat breakfast in their rooms, and even more intimate details of family life and of personal taste. These inquiries need to be made with tact and judgment. Watch people, learn their mode of life, see how they act in the railroad stations, restaurants, stores, and plan these buildings accordingly. A mastery of construction is necessary; the man who hasn't a grasp of it is handicapped in designing and is not an architect. The ability to write good specifications is essential.

The many-sided nature of architecture makes it at once the most difficult and the most fascinating of the fine arts.—Pencil Points.

* * * *

San Francisco's tallest skyscraper—the central office building of the Pacific States Telephone Company—is being designed by Architects Miller & Pfluegger and A. A. Cantin, associated. The building will be erected on New Montgomery street, near Mission and will be 26 stories high. The estimated cost is $3,000,000.

CORNER IN COURT OF MONASTERY, CERTOSA OF PAVIA, ITALY, (1523)
COLOR RED, UNGLAZED; TYPICAL OF EARLY ITALIAN TERRA COTTA WORK

Clay Products in Recent Skyscraper Design

Some Remarks on a Logical Material Technique

By F. S. LAURENCE*

THE three decades which have passed since the steel frame skyscraper began to dominate the architectural aspect of our larger cities have witnessed changes in tendencies of design which have come so gradually that their significance has escaped general notice. It is not commonly recognized that in some very fundamental particulars a new architectural style is already here and has been working itself out to the surface in terms of detail which foreshadow eventually a distinctive periodic identity.

An architecture whose present gamut of formal and decorative effects grew principally out of the problems of construction in self-supporting masonry, has naturally left a tendency in practice today to cling to the features of detail design evolved under that system and it is perhaps natural that this should persist to the point even, where their significance under the present system of hidden frame construction is completely negatived by other points in design which reveal the actual organic fact. We have the attempted simulation of massive stone masonry in cornice and entablature profiles and in ashlar jointing and surface textures, coupled with reveals which assert their frankly veneer character as the thinnest of thin skins applied over something else and a hundred and one other incongruities of design which have become current.

Is it a rash prophecy to suggest that it will not be very long, perhaps but a few years, before the absurdity of having different points of treatment in the same design negative each other will not be regarded with the complacency which now greets that result? This question raises at once an aspect of treatment which is bound to receive an increasing emphasis in design as this becomes more meaningful and vital—a more true and distinctive technique of material itself—brick as brick, stone as stone, terra cotta as terra cotta, etc.—according to the limitations and possibilities of each for reaching a surface finish of significant and appropriate beauty, consistent throughout in its implications of organic structural fact.

Among the materials which lend themselves most readily to this result is architectural terra cotta. As with stone, past uses of terra cotta in examples of historic precedent have laid the background of a purely masonry treatment of self-supporting character. This erects a sort of mental barrier to envisaging anything outside familiar motives of design in that line. Tile it is true, has offered the suggestion of purely flat veneer treatment and has plenty of precedent to support its application in this way, but it does not offer the characteristics demanded for the successful veneer of the larger types of buildings where considerations of scale require a fulness in modeled relief, a depth of projection in certain applied features and a size of unit which are beyond the limitations of the tile manufacturing process.

Between the two extremes of purely stone masonry design and purely flat tile veneer lies a vast range of potential possibility for a flexible medium like terra cotta which can combine all the effects of flat surface finish with the formal features and highly modeled relief necessary to a satisfying architectural expression and which offers also an

* Executive Secretary, National Terra Cotta Society.

extensive range of permanent chromatic effects, especially in polychrome design. The development of a truly significant modern technique for this ancient material is therefore among the most promising lines of study which can engage attention of the architectural profession at the present time.

In considering the treatment of terra cotta which may best achieve a distinctive beauty natural to the material and thus realize for it a more definite technique, we turn naturally to the inspiration which can be drawn from examples of historic precedent. The remoter examples in early Assyrian and Asiatic ceramic work may be disregarded and sources of suggestion more appropriate and sufficing to modern needs may be found in the later uses of terra cotta made by the ancient Greeks and Romans and to a much more helpful degree from the terra cotta work of the early Renaissance in southern Europe and chiefly Italy.

Here the structural aspect may be largely disregarded in view of the different necessities in this respect of our modern construction and the fact that the technical development of terra cotta has advanced so vastly that the limitations to its application have been greatly expanded. While examples exist in which very large pieces were successfully produced not only in Southern Europe during the Renaissance but in the far earlier examples of ancient Greece, such as the Acroterium of the Temple of Hera, a terra cotta disc measuring over seven feet in diameter made in one piece, the limitations of early manufacture obliged as a rule small pieces and a use for architectural purposes confined chiefly to decorative treatment in panels and other features of detail ornament. The production of ashlar in large quantities was rarely or never attempted. Appliances did not exist to make bulk production in this form readily possible. Today modern methods of manufacture coupled with extensive facilities, enable the production of ashlar and other plain elements in great quantities and in piece sizes and proportions wholly beyond what was generally possible in early times, while more exact knowledge and control of material enable their production in much truer form. The development in surface finish, glazes, and range of coloring obtainable in these has also been greatly expanded.

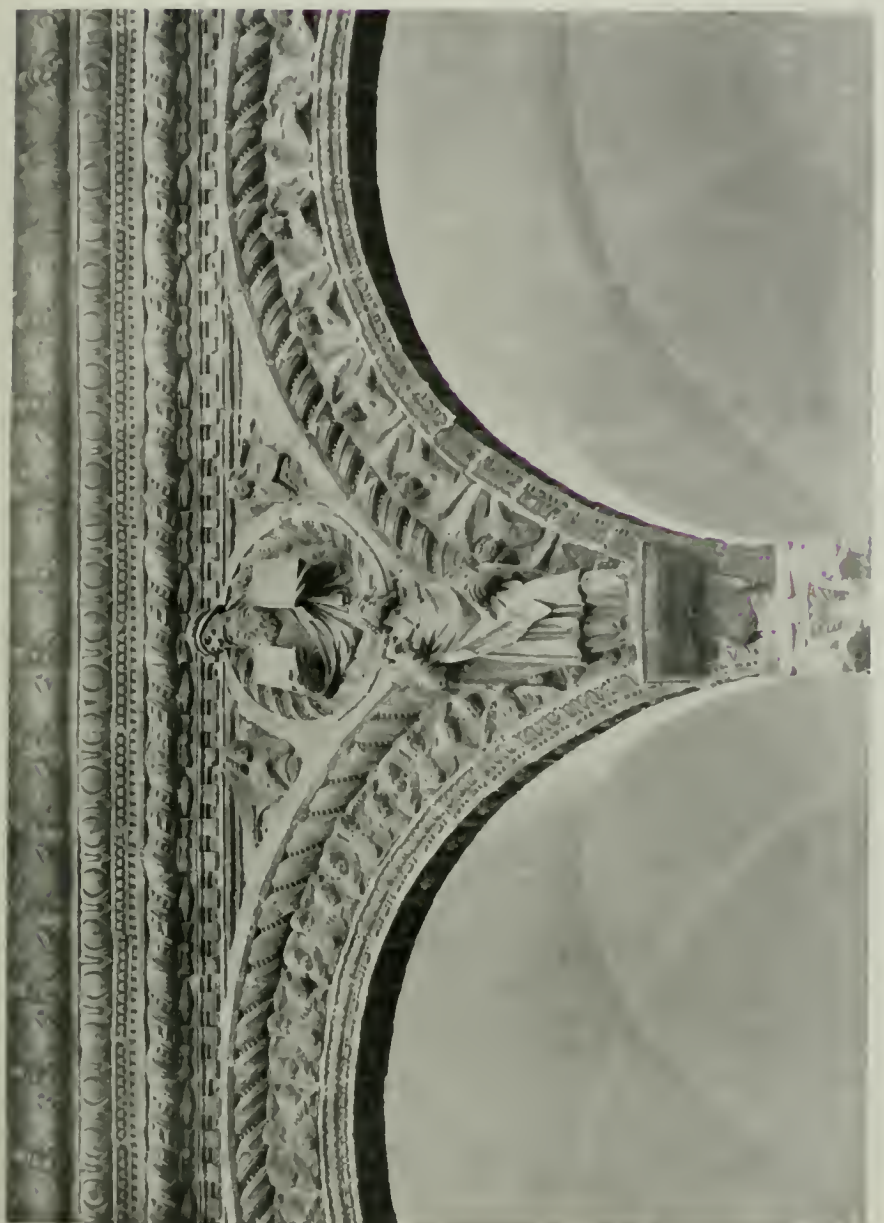
With these facts in view a rational use of the modern product would not limit it to the precise uses and effects obtained in earlier historic examples whether of Greece or Italy. Nevertheless, there are some very important lessons to be drawn from these examples in respect to certain points in their treatment which illustrate a truly significant handling of the material. A similar observance of logic in handling the modern product would avail itself of all the resources for scope and effect now offered in the material combined with the careful regard for its natural qualities as a clay medium which was invariably shown in the best periods of its earliest historic use. This intelligent regard for the nature of medium abjured the attempt to simulate the rigid qualities of evenly chiseled stone and admitted frankly the tendency of a burned clay to exhibit variations of color and irregularities of form arising in the firing process. The illustrations of details in early terra cotta work convey an excellent suggestion of the spirit in which modeled detail should be treated in terra cotta. By no possibility could the treatment given the modeling in the terra cotta detail from the Certosa at Pavia nor the fragment of ancient Roman terra cotta be mistaken for stone carving or anything but frankly modeled clay, pushed about by the modeler's thumb and inscribed at will freely by the modeler's tool rather than carved laboriously by the sculptor's chisel.

TERRA COTTA DETAIL, PERSHING SQUARE BUILDING, NEW YORK
YORK & SAWYER AND JOHN SLOAN, ARCHITECTS

Color Buff, Fire Flashed with Gold and Brown

FRAGMENT OF ANCIENT ROMAN TERRA COTTA, METROPOLITAN MUSEUM OF ART, NEW YORK, SHOWS NATURAL TREATMENT OF CLAY TYPICAL OF THE PERIOD

SAN FRANCISCO
PUBLIC LIBRARY



TERRA COTTA DETAIL IN MONASTERY COURT, CERTOSA OF PAVIA, ITALY, SHOWS SMALL SIZE OF PIECES OBTAINABLE IN EARLY WORK AND CHARM DERIVED FROM IRREGULARITY

TERRA COTTA DETAIL, STANDARD OIL BUILDING, SAN FRANCISCO
GEO. W. KELHAM, ARCHITECT

TERRA COTTA DETAIL, STANDARD OIL BUILDING, SAN FRANCISCO
GEO. W. KELHAM, ARCHITECT

BELL TELEPHONE BUILDING, KANSAS CITY, MISSOURI
HOIT, PRICE & BARNES, ARCHITECTS
Logical use of Terra Cotta as Covering for Steel Frame

Terra Cotta Throughout

PERSHING SQUARE BUILDING, NEW YORK, N. Y.
YORK & SAWYER AND JOHN SLOAN, ARCHITECTS

Better Architecture Competition

THE California Association of Commercial Secretaries has appointed a committee consisting of Messrs. Lynn W. Ballard, Roscoe D. Wyatt and Charles Keeler, with Chas. H. Cheney as professional advisor, to conduct a Better Architecture Competition, by which is meant a jury selection of the best examples of architecture and landscape architecture in California. This committee was appointed at the annual convention of the Association held in Santa Cruz last February. The following is a gist of the program adopted by the committee:

To the Chambers of Commerce of California:—

What are the most notable examples of architecture and landscape architecture in your city? How many of them should we pick to be among the most notable examples of the whole state?

Purpose. To improve the attractiveness of the city should be one of the most important tasks of every chamber of commerce. Few cities of the state have as yet any authentic list or record of what are the most notable examples of architecture, landscape architecture, sculpture, or small houses within their metropolitan area; and certainly no state-wide selection has ever been authentically made. If attention can be called to the better work in each city and throughout the state, there is some hope of raising our standards of comparison and thereby increasing the attractiveness of our cities. To this end, your committee announces the following method of selection, and recommends some educational and publicity work that will be of distinct advantage locally.

Method of State Selection. Every two years, at the state meeting, there will be exhibited:

(1) The ten most notable examples of architecture in California.
(2) The five most notable examples of landscape architecture.
(3) The three most notable examples of public sculpture, and
(4) The five most notable examples of small house architecture.

Together with not more than twice this number of examples in each class given honorable mention, selected by a competent jury appointed by this committee and similar in membership to the local juries described below. Only chambers of commerce making selection by jury as prescribed below shall be entitled to submit photographs of their local most notable examples to the state-wide jury, provided that the state jury shall have the right to insert and add any examples that it may deem advisable, to make a properly representative showing for the whole state. The first state-wide selection will be exhibited at Eureka, in February, 1924, or at the time of the next state convention and all photographs of local selections to be considered must be received by the Secretary of the Chamber of Commerce of Long Beach, marked "Better Architecture Competition," on or before February 1st, 1924.

RULES FOR LOCAL SELECTIONS

The Secretary of the Chamber of Commerce in each city making a jury selection shall arrange for the appointment of a properly qualified and disinterested jury of selection, at least a majority of whose members shall be trained architects, landscape architects, or painters, preferably from outside the city, and none of whom shall have done any of the buildings or landscape work to be considered. No architect shall serve who is not a member of the American Institute of Architects.

Nomination of the Jury. The Secretary of the Chamber shall arrange for a mail ballot similar to the form attached, and one ballot shall be sent to every certified architect in the city and to every landscape architect who has no connection with any nursery or any interest in the selling of plants. Besides the three trained members of the jury, there should be two citizens named, who are versed in matters of art.

Appointment of Local Jury. When the nominations for the local jury have been received, the Secretary of the Chamber shall arrange with the President of the official City Planning Commission, if there be one, or in its absence with the mayor, to name the members of the jury from the ten nominees receiving the highest number of votes. The object in the appointment of the jury at all times should be to obtain a personnel whose judgments the local architects, as well as other local people, will respect.

Limits of the Metropolitan Area. The jury shall consider any and all buildings, landscape architecture, and public sculpture within the city and not more than five miles outside the city limits, provided that where this five mile extension reaches into the territory of another city, the jury shall not go more than half way. As

far as possible, the jury shall personally visit and view all sections of the city and vicinity, and note with care all buildings, parks, gardens, and sculpture that seem worthy of consideration.

Points to Be Considered by the Jury. Points of architecture to be considered are usefulness, arrangement, relation of exterior design to interior design, beauty, harmony of detail, setting, purpose, color, and appropriateness. The size or cost of the structure is not unduly to influence the jury's decision. There is a special quality possessed by some buildings and gardens—the elusive quality of charm—which must be taken into account, as it may be said to represent the soul of the design. All kinds and uses of buildings—residential, commercial, industrial, educational, religious, public and semi-public—should be compared by the jury to see which seems to express the highest development of architecture. The final selections and lists are to be made up from those found most notable in the opinion of the jury, regardless of size, type, or use.

The points of landscape architecture, public sculpture and small houses to be considered are left to the discretion of the jury. No house which at the time of the jury meeting would cost more than $5000 to duplicate, shall be considered a small house.

Only structures, parks, gardens, and sculptures that are existing, built, and in place are to be considered. If, in the opinion of the jury, there are not found sufficient examples of the various classes to be worthy of note, the jury shall list only as many in each class as it is willing to recommend.

Similar jury reports on the above basis have been made during the past four years in several coast cities, and the written reports are published in The Architect and Engineer of San Francisco, as follows: for Portland, in the March, 1919, number; for Los Angeles, in the August, 1920, number; and for Spokane in the June, 1921, number.

Getting Important Examples to the Jury's Attention.—In order that the jury may not overlook the most important examples of architecture, landscape architecture, and public sculpture that should be considered, the Secretary of the Chamber of Commerce shall send out an inquiry form similar to that attached, to every certified architect and landscape architect of the city, inviting the submission of a list of the two best examples of the architect's or landscape architect's own work, and his recommendation of the buildings, gardens, and public sculpture that the jury should consider, and where they are located. These suggestion forms should be sent out at least ten days before the jury is to meet, with a return envelope addressed "Secretary Architectural Jury, care of the Chamber of Commerce," and they should be turned over to the Secretary of the Jury two days in advance of its meeting, for compilation. All such suggestions shall be treated as confidential. In no case is the jury to be asked to favor any architect or owner, or to make any discrimination of any nature. Every effort must be made to secure a fair and impartial judgment.

Meetings of the Jury. The Secretary of the Chamber of Commerce shall arrange for the meetings of the jury, which are to be in executive session with none other than the jury present, except that the Secretary of the Chamber shall arrange that a seven passenger car (preferably a closed car) with a driver, be placed at the disposal of the jury during each day that it is in session. The meetings of the jury to cover the ground, will require from two to eight days, according to the size of the city, during which they should be publicly entertained not more than once in order not to interfere with their work. (The Spokane and Portland juries, referred to above, completed their work in three days each. The Los Angeles jury required eight days to cover the ground.)

Filing Final Report of Jury. One copy of the final report of the jury shall be forwarded by registered mail addressed "Chairman Better Architecture Committee, care Chamber of Commerce, Long Beach, Calif.," and must be received together with photographic reproduction of the selections (or of as many of them as possible) before February 1st, 1924, to be considered for the state-wide selection. The Secretary of the local Chamber of Commerce shall send in not more than four different photographs (preferably 8" x 10" glossy prints for reproduction) of each selection of the local jury, for the consideration of the state jury. (Note: these photographs can usually be obtained from the architects of the buildings.) On the back of each photo there should be correctly noted the name and location of the building, the name of the owner, the architect who designed it and the photographer.

This committee reserves the right to publish any and all photographs submitted to it in the Better Architecture Competition, in any and all publications anywhere, for the advertisement of what is worth while in California.

Your co-operation is asked immediately in organizing a jury of selection for your city and the submission of its report to this committee, together with photographic reproductions of the selections made, well in advance of February 1st, 1924.

Please address requests for copies of this program to this committee, care of Long Beach Chamber of Commerce, and questions as to the jury and its work to our professional advisor, Chas. H. Cheney, City Planner, Hotel Redondo, Redondo Beach.

Faithfully yours,
COMMITTEE ON BETTER ARCHITECTURE.
California Association of Commercial Secretaries.
LYNN W. BALLARD
ROSCOE D. WYATT
CHARLES KEELER

CHAS. H. CHENEY, Professional Advisor.

* * * *

How Sound Proof Rooms May Be Constructed

VISITORS to New York, who long for even a few moments' cessation of the city's racket may, if they are properly introduced, be taken to four rooms where practically no outside sound can reach them. These rooms, however, are not maintained to give relief to overstrained nerves. They are in daily use by engineers of the Western Electric Company in the Bell Telephone Laboratories at West street for carrying on delicate tests of telephonic apparatus. The four rooms, which on the outside look like traditional "padded cells," are as thoroughly sound-proof as ingenuity can make them. Their design was based on principles and data published by the late Prof. W. C. Sabine of Harvard University.

To shut out the vibrations which would be transmitted by the floor, the rooms are built on foundations of three alternate layers of one-inch thick special all-wool felt and sheet iron. The maple flooring, which is individual for each booth, is laid on top of this foundation and covered with battleship linoleum. The idea of the alternate layers of felt and sheet iron is that the sound vibrations, which are not damped out in passing through the felt, will be reflected by the sheet iron.

The walls are double, and the inner one is built on top of the maple flooring. The framework for this inner wall is made of 2 by 3-inch timbers, making a three-inch air-space. Nailed to the inside of this framework is a layer of sheet iron. Over the sheet iron is a one-inch layer of felt, and this is finished off with burlap. Nailed to the outside of the two by three's is a layer of felt; outside of this is the outer wall. This rests on the main floor of the room in which the booths are built and is entirely free from the inner wall and its resilient foundation. The outer wall consists of a frame work of I-beams, and built up between these is a wall of gypsum blocks. The booths are entered from the outside world by double doors, one door mounted on the door-frame of the inner shell and the other mounted on the door frame of the outer gypsum block wall. The doors are provided with heavy glass panels set in felt.

The booths are ventilated by a small ventilating fan which has been mounted on a wall at a distance of about fifteen feet so as not to convey any vibrations to the wall of the booth. The pipe carrying the air to the booth is lined with felt and terminates in a felt-lined box equipped with felt baffle plates through which the air escapes into the booth practically free from sound vibrations. The air also escapes from the booth through one of these baffle boxes.

The feelings of one who has been accustomed to city noises, for a time on entering one of these booths, is that of almost suffocating stillness such as might be experienced out in the woods on the stillest of stilly summer nights.—Building Age.

Some Advantages of Stucco

By P. A. MALONE, President California Stucco Company

THE chief advantages of stucco as an exterior finish for buildings are that when properly mixed and applied, it provides a permanent covering which requires a minimum of attention and repairs. Stucco never need be painted if a good colored stucco is used at the outset. This alone reduces the maintenance cost of the house very materially. Stucco reduces the liability of a conflagration, since a plaster house cannot be set on fire by sparks as can a frame or shingle house. Stucco lends itself readily to ornamentation. It can be easily adapted to architectural details of construction and environments, by surface texture or color, or by a combination of texture and color. Stucco demands sand as a principal ingredient of the exterior covering, and as a rule sand is the cheapest and most available material in every section of the country. Stucco is a non-conductor of heat, which naturally makes a warmer house in the winter and a cooler house in the summer.

England and France contain many buildings, centuries old, which were covered with stucco and are still in good condition. This fact refutes the statement which has been made that stucco will endure only in dry or warm climates. There are many fine examples of stucco in our Middle Atlantic states, which section, it has been said, has the worst climate in the world. These were constructed prior to the Revolutionary war, and upon them the stucco is still in good condition. In fact, exterior plaster or stucco was one of the first materials used by man to protect the outside of buildings. The high state of development of the art, as evidenced in the ruins of Egypt and other places, many of which date back several centuries before the Christian era, bear testimony to the fact that there has been generations of experiment and observation. The splendid condition of this ancient stucco today, bears evidence to the fact that it is enduring.

In recent years there has been a revival of interest in stucco, and there are thousands of modern buildings in California covered with this material.

It has truthfully been said by one of our greatest authorities that any building is dependent on three principles for its beauty, namely—design, texture and color. We know of no material that adapts itself as readily or as economically to these three principles as does stucco.

Anyone who is privileged to visit Los Angeles is at once taken with the beautifully designed homes. This would not be possible nor could it have been brought about with any other material than stucco, and the entire effect would be lost without color.

* * * *

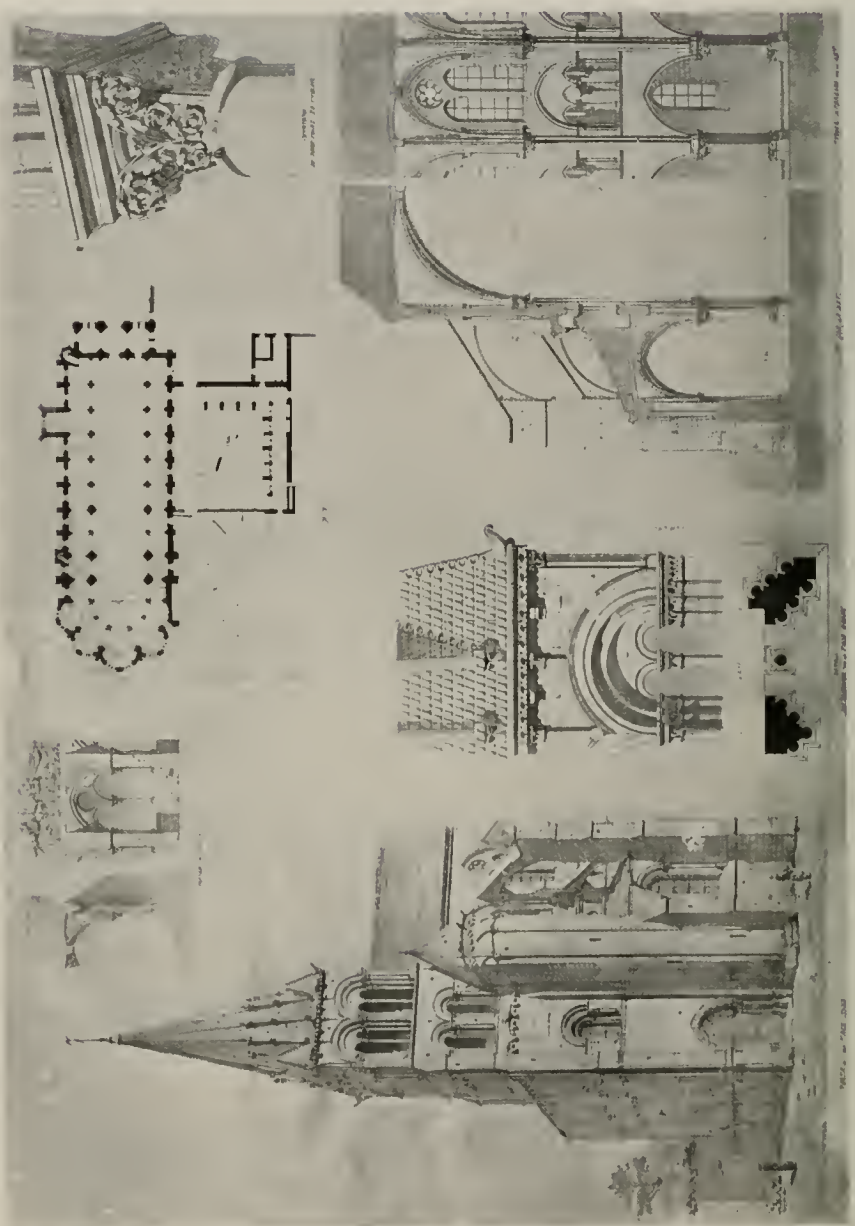
"The book to read is not the one which thinks for you, but the one which makes you think."

* * * *

"Don't be so concerned over what people might think about you; the chances are they seldom think about you at all."

* * * *

The architect who is intelligent in looking after his own business interests is usually intelligent in looking after his clients' business interests.



DETAILS, CHURCH AT ST. LEU D'ESSERENT
DRAWN BY, R. H. BICKEL

The Church at St. Leu d' Esserent

By R. H. BICKEL

IT has been pointed out by many well-known writers on Gothic architecture that to appreciate the structural principles underlying the art, out of which grew the great cathedrals of the XII-XV centuries one should go to that part of France contiguous to Paris known of yore as the Ile-de-France, the seat also of the original Capetian monarchy, for it was here that the earlier, cruder, Romanesque forms were first given that analytic study the result of which we see today in the churches of this region, and extending outward, in lesser degree, to other regions and countries. It is interesting to trace the development within the Ile-de-France of this growth, which is overlooked in the more general consideration of the subject, and while the cathedrals offer a wealth of data in themselves, one finds in the parish churches some of the most striking features. It was in these less important edifices that the early architect developed his theories, experimented with new processes, encountered failure as well as success, gaining the experience that was to enable him to undertake the greatest works of the Age of Faith.

The chief beauty in the French cathedral plan is the developed chevet—the semicircular apse with ambulatory passage and radiating chapels. The two earliest examples of this treatment are to be found at Morienval, in the valley of the Oise and at St. Germer in Beauvaisis, both dating from the first years of the XII century and each with its advocates for priority. Farther down the Oise and four miles from Creil, is the church of St. Leu d'Esserent, which according to M. Gense, must have been finished by the end of the first quarter of the XII century, a perfect example of the transitional style. It is thus but a few years later than the two mentioned above and may have been building at the same time, although the greater regularity and the finish of workmanship would tend to place it as he says, a little later. The Romanesque character of the design shows distinctly in the stepped, round arches, the sculpture, and the heavy walls, while in vaulting is to be seen the newer principle of the ribbed compartment vault, the "croisée d'egives," in which the thrusts are transmitted to the piers and countered by the arched buttresses. The chevet is complete and one of the most beautiful of this period, it lacks only the colored glass to give it the wonderful atmosphere which the mediaeval artists intended for it. In detail it is of a later character than the nave, which in turn is later than the narthex and west tower, thus illustrating the successive stages of the construction.

Approaching from the west the Romanesque character of the edifice strikes one first, the two stories of stepped arches, the zigzag ornament, and the fine conical stone roofed tower, but the forms are quite light and graceful; stepping to one side there comes into view the succession of buttresses from which spring the slender arches that carry the thrust of the main vault—a Gothic principle. There is still more wall space than necessary and the windows are small and devoid of tracery. The narthex is an open porch. Once inside the uniformity of the bays is almost too marked: this maybe due to the restoration, but probably more to the lack of a transept, for which this church is peculiar. There is a crossing marked by heavy piers and sexpartite vault, back of which are the piers supporting the two transept towers, a disposition not

frequent in the French style. The vaulting is the same system as that employed at Chartres, Amiens, etc., and nowhere are the vaulting shafts more simple and effective. They express perfectly their function, carrying down the lines of transverse arch and diagonal rib to the pier capitals, a disposition followed at St. Denis, Notre Dame de Paris, and as late as at Beauvais, and their relative importance is well differentiated in their respective sections. The groined ribs in both nave and aisles are the typical torus, or "sausage" section, the transverse ribs are the double torus found in all the French cathedrals of the XII and XIII centuries. From the entrance to the choir there is a gradual increase of richness in the sculpture of the pier capitals, those around the ambulatory show a considerable degree of profusion and a character close to the high Gothic. At the crossing the vaulting shafts carry to the pavement. It is not clear whether or not a transept was intended originally, it is logical to suppose the affirmative and certain irregularities occuring at this point bear out the supposition, but no definite data appears available.* However, the hill upon which the church is built drops away suddenly to the south and more gradually to the north; it may have been that the builders considered the development of transepts a hazard due to the unfavorable terrain.

It is to be noted that the side aisles are roofed with stone slabs supported by small piers resting directly on the vaulting. The same construction is found at Notre Dame de Paris. The apsidal chapels are covered separately by wooden conical roofs, their shape giving rise to the belief that they too were intended to have been stone, examples for which are to be found at Morienval, Sens, and elsewhere.

The church measures 234 feet long and is 71 feet wide, including aisles. The height of the vault above the pavement is 58 feet.

*The cathedral of Bourges is without any transept.

* * * *

Heavy Duty Floors for Industrial Buildings

THE attractive appearance of terrazzo floors has long been recognized, but the use of this type of polished floor for industrial buildings is not so well appreciated.

The following is a description of the method of laying a heavy traffic floor in an Eastern shoe manufacturing plant. This floor is subjected to the action of very heavily loaded steel-wheeled trucks, and the method of construction was adopted after tests of the wearing qualities of the floor under severe conditions.

The rough slab was first picked, swept and washed with clean water. One-inch round steel bars were then placed as grounds and leveled up. The floor was again wet down and a 1:1 cement sand grout brushed on. Before the grout had set a 1:2 mixture of cement and trap rock uniformly graded from ⅛ to ¾-inch was dumped on the floor and screeded off. The mixture was as dry as it was possible to dump out of the mixer. The grounds were then removed and the spaces filled with the 1:2 mixture.

Just about the time when the topping material was stiffening up, an even coating of crushed trap rock was spread over the entire surface to a depth of ½ to ¾-inch and rolled into the surface with a 150-pound concrete roller. This roller was operated longitudinally and laterally until the entire area had been evenly rolled. A 900-pound roller was used next and last of all an 1,800-pound roller was operated laterally,

longitudinally and diagonally. This last rolling brought up some water and fine material to the surface.

As soon as possible after the final rolling, the floor was given a hand steel troweling sufficient only to smooth out any of the stone that had been up-ended by the rolling processes. Twelve men were able to trowel about 15,000 square feet of floor in two hours.

As a final operation the floor was ground with ordinary grinding machines using carborundum block and coarse powdered emery with a generous supply of water. The grinding operations were started from four to seven days after the topping had been placed.

After nineteen months of severe trucking these floors are in excellent condition, and due to the smooth and even surface, the trucks do not produce the usual heavy rumbling. This type of construction also appears to hold great promise of solving the problem of floor construction in ice cream factories, packing plants, etc., where the floors are subjected to the action of lactic, buteric or other weak aids in addition to truck traffic.

* * * *

Building Methods Primitive

There has been less development of the small labor-saving machine in engineering construction than is to the credit of either the constructor or the equipment manufacturer. Equipment for mass operations, as the steam shovel and concrete mixer, has been advanced far in mechanical perfection and in employment. So have special machines like the trench excavator and the paving mixer. It is in machines for individually small operations that development has lagged. Building construction, which is pronouncedly a series of non-continuous processes of great variety, furnishes a particularly good example. Except for the high development of pneumatic tools in steel erection, we find very few light-task, labor-saving machines used. Carpentry, plastering, painting, are most commonly hand operations on large buildings and are always manually performed in residence and other small building work. Why should acres of plaster in a modern large office or commercial building be put on with hand trowels and other acres of painting be a pail-and-brush operation? Why should yards of concrete floor be laboriously smoothed with hand floats? It is not beyond inventive skill to devise usable tools. Indeed, we already, it would appear, have the elements of successful tools in the cement gun, the sand blast, the paint sprayer and the wooden floor finisher.

All the backwardness does not, however, lie with the equipment manufacturer. Neither the contractor nor the artisan has progressed much beyond primitive thought in conducting many building operations. It does not seem possible for them to project their imagination beyond the hod and trowel in plastering or the bristle brush as a means of applying paint. Perhaps this is provocative speech, but that is exactly what the building contractor and his workmen deserve. In speaking publicly recently of his industry, one of the most prominent building contractors of the country said: "In the building industry alone, among leading industries, primitive methods still prevail." Again he said: "The high cost of building is traceable to the lack of progress in the building industry toward developing improved methods." Indeed, a little more ingenuity exercised by builders in devising new machines and methods and a little less in inventing subterfuges for constructive thinking would greatly help present building conditions.—Engineering News-Record.

THE
Architect and Engineer
Incorporated
Founded 1905 by E. M. C. WHITNEY
W. J. L. Kierulff - President and Manager
Fred'k W. Jones - Vice-Pres. and Editor
G. H. Oyer - - - Advertising Manager
L. B. Penhorwood - - - - Secretary
T. C. Kierulff - - - - - - - Attorney
Associate Editors
Irving F. Morrow - -Architectural Critic
Chas. H. Cheney - - - - City Planning
Chas Peter Weeks - - - - Book Reviews
Emerson Knight, Wilbur D. Cook } Landscape Architecture
Wm. B. Gester - - Inspection and Tests
O. P. Shelley, C. E., F. W. Fitzpatrick } Fireproof Construction
T. Ronneberg, C. E. - - Structural Steel
W. H. Lowe - - - - Roofs and Roofing
Fred'k N. Woods, Jr. - - Rock and Gravel
Chas. Felix Butte - Electrical Construction
J. W. Fricke - - - - School Equipment

Published Monthly in the Interest of the Architects, Structural Engineers, Contractors and the Allied Trades of the Pacific Coast by The Architect and Engineer, Inc.

PUBLICATION OFFICE:
627-629 Foxcroft Building, San Francisco
Telephone Douglas 1828

The publishers disclaim any responsibility for statements made in the advertisements of this magazine.

Terms of Subscription
(Including postage) to all parts of the United States, $2.50 per annum; to Canada 75c additional; to all Foreign points $1 additional

Vol. LXXV NOV., 1923 No. 2

EVOLVING AN "AMERICAN STYLE" OF ARCHITECTURE

A conflict "almost revolutionary" is going on between "power" and labor, declares Prof. William A. Boring, director of the Columbia School of Architecture, in his annual report to President Nicholas Murray Butler. The buildings of today, he adds, are the silent historians of this struggle. Characteristic American architecture is being modified with consequent loss of beauty. Evidences of an American style are, however, beginning to appear, he declares.

"While it is recognized that a nation's history is truly reflected in the architecture it produces, we are hardly prepared to see this national expression follow the political and economic changes so promptly as is now evident throughout the land," the report reads. "The triumph of organized labor is a phenomenon which will be recorded permanently in the building of today.

"No longer do we see heaps of stone quarry blocks surrounding the site of a growing building and hear the pleasant chatter of the stone cutters' chisels giving architectural form to the stones. Today huge motor trucks bring all material ready to set in place, and their burdens are lifted by powerful derricks, and deposited on the scaffold. The hissing of hoisting engine and steam excavator, and the aggressive tattoo of the power riveter proclaim that a building is being reborn into the world.

"This state of things develops naturally in the struggle between power, on the one hand, to push forward, and of labor, on the other, to hold back. It is of great import; almost revolutionary in fact.

"The architecture of today is making a record of these conditions in the form, style and fabric of the buildings we erect. The practicing architects mold their design primarily to accommodate the needs of occupation, and then try to wrest, from an unwilling labor system, buildings which have some semblance of beauty.

"The characteristic forms and expressions of architecture, which are accepted to Americans, are modified to make a plain building look attractive and a cheap building to look at least inoffensive. Strict adherence to the minimum cost has shorn the average building of adornment.

"The School of Architecture at Columbia University is following the trend of the practitioners in design, by adopting a program of problems which embraces the typical buildings demanded by the American public. These buildings are designed by the students under the counsel and constructive criticism of our critics, who are able

practioners, and the competitions are judged by a jury of the faculty and eminent practicing architects. We believe an American style will in time appear, and that Columbia will participate in its gradual evolution, and, while it will be a slow growth, the evidence of its existence is apparent."

BUILDING COSTS LIKELY TO DROP SOME THIS WINTER

Conditions affecting construction activities next spring will be closely similar in character to those which prevailed at the opening of the eccentric building season of 1923, according to indications drawn from statements of leading general contractors and other observers of the trend of operations. These statements, stripped of localisms, also seem to coincide upon the thought that owners and others will do well to use caution next year in timing their operations, lest a "mad market" for labor and materials, such as threatened early this year, be encountered, and the entire situation demoralized.

The belief in some quarters, as expressed in the statements published in the current issue of the Constructor, official organ of the Associated General Contractors of America, also seems to be that an unusual amount of work is to be undertaken for completion during the first months of 1924. In some sections of the country, where the deficiency in buildings is especially noted, leaders are advocating that winter construction be urged, with a softening of prices of materials and of wages being held as inducement for this step to be taken to avert an extraordinary demand during the months when construction most ordinarily is placed under way.

Many of these individual statements deal directly with the question of whether curtailment of operations, such as was advocated and initiated by the Associated General Contractors of America last spring, be held as policy next year, to avoid run-away prices of materials and costs of labor, or whether a relaxation, perhaps entire absence of action, will be more advisable.

The following statement by Mr. L. C. Watson of the Aberthaw Company, Boston, sizes up the situation very well:

"My forecast for the future is that there will be slight reduction in building costs through the winter, due to softer spots in the material markets and increased labor efficiency, but that the usual spring building activity will bring costs back to about the present level. Therefore, a "Build Now" campaign for fall and winter is in line for stabilizing the industry and giving the investors a square deal."

The Cure?

Editor The Architect and Engineer,
San Francisco.

Answering your editorial in the October number entitled, "What Ails the Architect?" I submit the following remedy:

Put some teeth in the State Architectural Law. Simply require that in all municipalities no permit shall be granted for any structure unless the plans thereof have been signed by a certificated architect. Make no exceptions whatsoever. The small work will go to the architectural beginner, and he needs it. The medical law makes no exceptions—why should the architectural law make any? No one can practice dentistry without a certificate—why should anyone practice architecture, no matter how large or small the building, unless supplied with a certificate? No person can represent you in court except an attorney licensed to practice law, but we allow real estate firms to practice architecture.

The real estate men themselves got a bill through and it is now the law, making it a crime to solicit or collect a commission for the sale of property and forbidding even the splitting of a commission by a licensed agent with an unlicensed person. Why should it not be just as necessary for the public to be protected in its building operations as in its sales of properties?

An amendment to the present architectural laws is also necessary—the amendment should strike out from the body of the law these words: "Provided that nothing in this Act shall prevent any person from * * * furnishing plans or other data for buildings for other pursons, provided the person so furnishing such plans or data shall fully inform the person for whom such plans or data are furnished that he, the person furnishing such plans, is not a certificated architect. This is not a loop hole in the present law, but it is the whole wall knocked down.

ESTIMATOR.

COMPETITIONS

Small Brick House Competition

To meet the growing demand for artistically designed small brick houses, the California Common Brick Manufacturers Association has announced a small brick house design competition for which cash prizes totalling $1000 are offered.

The competition is being conducted under the auspices of the Southern California and San Francisco chapters of the American Institute of Architects. Mr. Harwood Hewitt, Los Angeles architect, is directing the competition as professional adviser.

Architects and home designers generally without restrictions as to residence, are invited to compete. The designs must represent houses to cost no more than $7500 when completed. All entries must be in the hands of the secretary of the California Common Brick Manufacturers Association, 342 Douglas building, Los Angeles, by December 15.

Nine major purses are offered ranging in value from $400 to $50. The association further agrees to buy at the price of the lowest award, all designs not selected as prize winners, but which are deemed worthy of special distinction.

The three judges of the competition will be designated by the Architects' Institute. Their decision will be made in time to award the prizes before Christmas. The names of the judges will be announced later.

The designs submitted must call for the use of common brick without the addition of stucco or any ornamental brick, stone or other material. No limitation is placed on the size or shape of the house or building lot. But the cost estimate is to include a one-car garage which may be a detached structure or an integral part of the house.

Xmas Card Competition

The National League of Women Voters has announced plans for a National Peace Christmas Card Competition as a practical means of advancing the idea of World Peace. The competition will be conducted by the Department of International Co-operation to Prevent War of the League and of which department, Miss Ruth Morgan is chairman.

Three prizes of $2,500, $1,000 and $500, respectively, will be awarded to artists whose designs best carry the thought of literal "Peace on Earth, Good-Will Towards Men." These prizes will be awarded on January 14th, 1924, following which the cards will be published and placed on sale in this and other countries for the Christmas season of 1924.

Miss Morgan, in announcing the Peace Christmas Card Competition, stated that the Department of Irternational Cooperation to Prevent War, feels that a Christmas card is the most practical and effective method of carrying a message of peace around the world.

The terms of the competition follow: "All designs submitted will be pudged on artistic merit, value as peace propaganda and reproductive possibilities. No person may submit more than three designs.

"Designs submitted must not exceed 20 by 30 inches, outside dimensions. Proportions are left to the decision of the artist. All designs submitted must be unframed. The work may be done in any medium with no color limitation.

"The title and thought of each design must be the artist's interpretation or conception of "Peace on Earth, Good-Will Towards Men." It may be the religious conception or not, as the artist sees fit.

"Two hundred of the designs submitted will be placed on exhibition in New York City between January 14th and January 28th. These designs may be sent to headquarters of the Peace Christmas Card Competition at any time after January 1st, 1924, and will be received until noon, January 10th.

"The competition is open to all artists who apply to Mrs. Meredith Hare, National League of Women Voters, 100 East 45th Street, New York City, before December 15th. Exhibition numbers and fuller instructions will be sent on the receipt of applications."

Nation-Wide Competition

A competition for American artists, enabling the winner to study in the Paris ateliers of the New York School of Fine and Applied Art, is announced by Mr. Frank Alvah Parsons and a committee of judges which includes society leaders, architects and decorators.

The scholarship, of $500, providing

transportation to and from France, and one year's tuition, is offered to stimulate interest, in interior decoration and architecture among the American people, and will be awarded to the American student of art and decoration who submits the best decorating and furnishing scheme for a five-room apartment.

The committee of judges includes Mrs. Seymour L. Cromwell, Elsie Cobb Wilson, decorator; Mrs. Charles H. Sabin, Mrs. Alice Duer Miller, author; Miss Mary Kernochan, Mr. Francis Lenygon, decorator; Mr. William Delano, architect; Mr. Richardson Wright, editor; and Mr. Chamberlin Dodds, decorator.

The scholarship is offered by E. A. MacDougall, president of the Queensboro Corporation of New York, as a fitting stimulus to further the relation between art and the building industry.

The competition closes January 31, 1924. Plans should be presented to the secretary, Mr. J. Mitchel Thorsen, 9 East 46th street, New York city.

Competition of House Beautiful Covers

The success of the competition for cover designs held last year has led the House Beautiful to repeat this event and again to offer two prizes, one of $500 and one of $250 to the successful contestants. The competition closes February 9, 1924. Full particulars regarding the competition may be had on application to the Competition Committee, House Beautiful, 8 Arlington street, Boston, Mass.

BOOK REVIEWS

Edited by
CHARLES PETER WEEKS

Art Training for Life and For Industry, by Charles Alpheus Bennett, published by the Manual Art Press, Peoria, Ill., price $1.00, states in an explanatory paragraph that:

"Appreciation of art is not the same as knowledge of art. It is not something that can be absorbed from books, or even from teachers; it is something that must be gained through experience. To know many facts about works of art, to learn the names of artists, to be familiar with events in the lives of painters and sculptors and craftsmen, even to be personally acquainted with artists and with the character of their works, is not to appreciate art. The essence of art appreciation is not primarily a matter of intellect, but of the emotions."

This book expounds a new theory for art education presented in a very readable and interesting manner. The idea is worth serious consideration by all educators and individuals interested in art. The basic idea is that of substituting for the usual course in drawing given in modern schools, a practical training in factories where industrial art is produced, thereby training the students to both appreciate and produce artistic things, and to stimulate clearer thinking about art appreciation, and the emphasizing of economic value of art.

Manual of Information on City Planning and Zoning, by Theodora Kimball; published by Harvard University Press, Cambridge, Mass.

The author of this book is a librarian of note, and the information in the volume should be of great interest to those in any way interested in city planning and zoning, as from it references to books on all branches of the subject may be obtained.

One Hundred Selected Plates from Fragments d'Architecture Antique, by D'Espouy, published by The Pencil Points Press, Inc., 19 East 24th St., New York City. Price $6.00 net.

This is the second volume of the Library of Architectural Documents published by the Pencil Points Press, Inc., and is an exceptionally fine reproduction of the original book by D'Espouy. It has additional plates that are not in the original volume, and is a very complete illustration of the best Greek and Roman classic work. The Pencil Points Press, Inc., are deserving of great commendation by architects and draftsmen for the work they are doing in reproducing the best architectural publications at a very reasonable price.

Architectural Compesition, by Nathaniel Cortland Curtis, published by J. H. Jansen, Caxton building, Cleveland, Ohio. 280 pages, one double plate with 270 illustrations. Price $6.00.

An extremely useful guide, both to architects and students, under the above title has been compiled by Mr. Curtis, following the general outline of that great work of Gaudet, "Elements et Theorie de l'Architecture." Starting with the elements of architecture, following with the elements of composition, the primary rules of composition, the program of the building, the parti, the author leads one by means of a carefully written text, thoroughly illustrated by drawings of plans, elevations, sections, and diagrams, through the entire logical development of architectural composition. This book would be of great help to one developing the design of any building, in that it would enable him to quickly grasp the underlying principle of his particular design and to select from many the particular parti most appropriate to his problem. It would also be of great assistance to any student in giving him a well-established foundation for the development of his future architectural compositions.

American Institute of Architects

(ORGANIZED 1857)

San Francisco Chapter

OFFICERS FOR 1923-24

PRESIDENT.....GEORGE W. KELHAM
VICE-PRESIDENT.....HENRY H. MEYERS
SECRETARY-TREASURER.....J. S FAIRWEATHER

DIRECTORS

WILLIAM MOOSER.....THREE YEARS
J. H. BLOHME.....THREE YEARS
A. J. EVERS.....TWO YEARS
HARRIS ALLEN.....TWO YEARS
S. SCHNAITTACHER.....ONE YEAR
MORRIS M. BRUCE.....ONE YEAR

Oregon Chapter, Portland

PRESIDENT.....CHARLES D JAMES
VICE-PRESIDENT.....FOLGER JOHNSON
SECRETARY.....WILLIAM L. SMITH
TREASURER.....ORMOND R. BEAN

DIRECTORS

WM. C. KNIGHTON WM. G. PURCELL JOHN V. BENNES

Southern California Chapter

PRESIDENT.....SUMNER P. HUNT
VICE-PRESIDENT.....A. M. EDELMAN
SECRETARY.....CHAS. F. PLUMMER
TREASURER.....ALFRED W REA

DIRECTORS

C. E. NOERENBERG.....ONE YEAR
DAVID J. WITMER.....TWO YEARS
EDWIN BERGSTROM.....THREE YEARS

Washington State Chapter

PRESIDENT.....CARL F. GOULD
SECRETARY.....A. F. MENKE
TREASURER.....CARL SIEBRAND
FIRST VICE-PRESIDENT.....LOUIS BAEDER
SECOND VICE-PRESIDENT.....ROY S. MASON
THIRD VICE-PRESIDENT.....GEORGE H. KEITH

San Francisco Architectural Club

77 O'Farrell Street

PRESIDENT.....MARK T. JORGENSEN
VICE-PRESIDENT.....EDGAR B. HURT
SECRETARY.....CARL R. SCHMIDTS
TREASURER.....LAWRENCE H. KEYSER

DIRECTORS

WILLIAM ROWE FELIX RAYNAUD J. B. MCCOOL

California State Board of Architecture

Northern District

Phelan Building, San Francisco

PRESIDENT.....CLARENCE R. WARD
SECTY. & TREAS.....SYLVAIN SCHNAITTACHER
233 Post Street
EDWARD GLASS JOHN J. DONOVAN JAMES R. MILLER

Southern District

Pacific Finance Bldg., Los Angeles

PRESIOENT.....WILLIAM J. DODD
SECTY. & TREASURER.....A. M. EDELMAN
JOHN PARKINSON MYRON HUNT W. H. WHEELER

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of Congress of August 24, 1912,

Of THE ARCHITECT AND ENGINEER, published monthly at San Francisco, California, for October 1st, 1923.

State of California, } ss.
City and County of San Francisco }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared W. J. Kierulff, who, having been duly sworn according to law, deposes and says that he is the business manager and publisher of THE ARCHITECT AND ENGINEER, Inc., and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of — Post Office Address

Publisher, The Architect and Engineer, Inc., 627 Foxcroft Bldg., San Francisco.
Editor, F. W. Jones, 627 Foxcroft Bldg., San Francisco.
Business Manager, W. J. Kierulff, 627 Foxcroft Bldg., San Francisco.

2. That the owners are: (Give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.)

W. J. L. Kierulff, 627 Foxcroft Bldg., San Francisco.
F. W. Jones, 627 Foxcroft Bldg., San Francisco.
L. B. Penhorwood, 627 Foxcroft Bldg., San Francisco.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is——. (This information is required from daily publications only.)

W. J. L. KIERULFF, Business Manager.

Sworn to and subscribed before me this 18th day of September, 1923.

MARY D. F. HUDSON.

Notary Public in and for the City and County of San Francisco, State of California.

My Commission expires December 22nd, 1924.

With the Architects

Building Reports and Personal Mention of Interest to the Profession

San Francisco School

Plans are being completed by Architect John Reid, Jr., for the new High School of Commerce to be erected on the block bounded by Franklin, Hayes and Fell streets, and Van Ness avenue, San Francisco, at an estimated cost of $800,000. The group will include an auditorium to seat 1800 persons, a two-story gymnasium, a four-story academic building, and a one-story library. Mr. Reid's office is also busy on the working drawings for the $2,000,000 Relief Home to be built near the Laguna Honda station. This group will include administration building, men's and women's dormitories, servants quarters, auditorium and chapel.

Los Angeles Architects Busy

New work in the office of Architects Walker & Eisen, Pacific Finance building, Los Angeles, totals a sum in excess of $5,000,000. Some of the more important work, for which plans are being prepared by these architects, includes a 14-story Class A store and office building at Salt Lake City, for Mr. C. A. Quigley, estimated to cost $1,000,000; a 14-story Class A apartment house at Long Beach, for the Walter Horne Company, to cost $900,000, and an 11-story Class A family hotel at Willshire Boulevard and New Hampshire street, Los Angeles, for Mr. A. C. Blumenthal and associates, to cost $1,800,000.

Glace Fruit Factory

The Lyon California Glace Fruit Company, 535 Folsom street, San Francisco, is having plans prepared by the architectural department of George Wagner, 251 Kearny street, San Francisco, for a one- and two-story reinforced concrete office building, factory and warehouse, to be erected at 16th and Alabama streets, San Francisco, at an estimated cost of $250,000. Mr. Wagner will be in charge of construction.

Palo Alto Parish House

Plans are being prepared by Architect John K. Branner, 251 Kearny street, San Francisco, for a frame and stucco parish house at Palo Alto, for the All Saints' Episcopal Church.

Bakersfield Academic Building

Plans are being prepared by Architect Charles H. Biggar, Bank of Italy building, Bakersfield, for a two-story and basement brick and concrete academic building for the Kern County Union High School District. There will be 24 classrooms but only a portion of them will be finished, the others being arranged as a temporary study hall. The estimated cost is $140,000. Construction will start in the spring. Contracts have just been let by the Kern County Supervisors for the construction of the first unit of the Old People's Home at Bakersfield, from plans by Architect Biggar.

Mount Zion Nurse's Home

Plans have been completed by Architects Sam Lightner Hyman and Sylvain Schnaittacher, associated, of San Francisco, for a five-story and basement Class B nurses home to be built for the Mount Zion Hospital at Post and Scott streets, San Francisco. The building will cost in the neighborhood of $200,000.

Concrete Factory and Warehouse

Working drawings are being completed by Architect George W. Kelham of San Francisco for Hills Brothers' new building to be erected on Harrison street, between Steuart and Spear streets, San Francisco. The building will be five stories and basement, and will cost approximately $750,000.

Class A Warehouse

A ten-story Class A warehouse is to be constructed on the southeast corner of San Pedro and Commercial streets, Los Angeles, for the Los Angeles Warehouse Company, at an approximate cost of $500,000. Albert C. Martin, Higgins building, Los Angeles, is the architect.

Berkeley Residence

Architect C. E. Gottschalk of San Francisco has completed plans for a two-story frame and stucco residence to be built on Hawthorne Terrace in the burned district of Berkeley for Mr. H. H. Whiting. The house is to cost $12,000.

S. F. Architectural Club Notes

Since the banquet the San Francisco Architectural Club members are directing their efforts to the success of the annual club jinx to be held in December. Mr. Al Williams may be seen most any day in whispered consultation with other members of the Entertainment committee, with a mysterious and knowing smile forcing itself upon his countenance. Mr. Wilton Smith closes up like a clam, and is apparently as much unconcerned, but we have always been told that appearances are deceiving with these quiet fellows. Discordant strains of guitars, banjos and ukeleles are heard emerging from the Atelier room every night, but still a trained ear can discern a remarkable improvement from a week ago. Rehearsals are the order of the day, and yet everything seems to be shrouded in mystery.

The free hand drawing class started in September has proved such a success that it has been decided to continue the class for another 10 weeks, starting on November 27, to draw from living models.

The following new members have been elected during the past month: Messrs. H. W. Ruppel, George W. Travis, M. Bernstein, Mark E. Manning, Theodore Vierra, Edward Cereghino, Bernard W. H. Scott, and James Edward Bodem. The club is now aiming toward a goal of 300 members, and at the present rate of increase, it will soon be reached.

Modesto Architect Busy

Architect James H. Hoose, Ramont building, Modesto, is completing plans for the new Elks building in that city, which is to cost $100,000. The building will be erected at 13th and I streets, and will be of steel and brick construction, three stories high. Mr. Hoose is completing plans for a concrete and brick store building, moving picture theater and lodge hall for the Ripon Lodge of Odd Fellows, estimated to cost $50,000. Plans are being completed by the same architect for a masonry construction schoolhouse for the Romero District, near Los Banos, Merced county.

Berkeley Store Building

Mr. Leonard H. Ford of the East Bay Planners, 306 14th street, Oakland, has prepared plans for a two-story Class C brick and terra cotta store and apartment building to be erected on the southeast corner of Telegraph avenue and Channing way, Berkeley. The entire ground floor has been leased to S. H. Brake Co., women's furnishings.

Personal

Architect John Stafford White, formerly with Architect W. E. Milwain of Oakland, has moved from Walnut Creek, Contra Costa County, to 916 North Louise street, Glendale.

* * *

Mr. John Walker Emart, architect, has opened offices at 610 W. Main street, Alhambra, for the practice of the profession. Mr. Emart was for a time with Messrs. Walker & Eisen of Los Angeles, and later with Mr. Kenneth MacDonald, Jr. Samples and catalogues will be acceptable.

* * *

Mr. E. L. Bruner, architect and structural engineer, formerly with the Trewhitt Shields Co. of Fresno, has entered the organization of Hamm & Grant, Inc., engineers and contractors, 607 Ferguson building, Los Angeles, and will be in charge of all design work.

* * *

Mr. Samuel B. Birds, architect and engineer, has moved his office from 310 Citizens National Bank building to 310 Frost building, 145 South Broadway, Los Angeles.

* * *

Architect J. L. McCauley of Seattle has moved his offices from the New York building to the Alaska building, Seattle. A. A. Geiser is associated with Mr. McCauley.

* * *

Mr. Charles H. Cheney, city planning expert employed by the city of Santa Barbara, will assist the building ordinance committee of the Santa Barbara chamber of commerce in framing a new building code for the city. It is expected the new ordinance will be presented to the city council in about a month.

Completing School Plans

Architects Ernest J. Kump & Company, Rowell building, Fresno, is completing plans for a two-story brick and concrete elementary school building at Reedley for the Reedley Grammar School District. There will be ten classrooms and auditorium. The estimated cost is $100,000. Mr. Kump is also completing plans for a $15,000 frame residence in Visalia, for Mr. B. L. Price.

Berkeley Residence

Plans have been completed by Architect W. H. Ratcliff, Jr., for a $10,000 residence to be built in the burned district in Berkeley, for Mr. J. S. Kingsley.

Walnut Creek Church

Plans are being prepared by Architect W. J. Wythe, Central Bank building, Oakland, for a $20,000 church for the Walnut Creek Presbyterian Society.

Berkeley Bans Wood Shingle

Berkeley's "anti-shingle" ordinance has been passed, despite the protests of representatives of the lumber interests and private citizens. Intimations that the referendum would be invoked to halt the ordinance were conveyed to the council by Attorney J. J. Murphy, who appeared to oppose its passage.

The ordinance affects not only the burned over district, but the entire city as well. It provides that when repairs amounting to 40 per cent or more are to be made on a shingle roof, the old roof must be removed and replaced with some "fire-resisting" material. No shingle roofs are to be permitted on new structures.

Architect's Wife Sues

Damages totaling $134,000 are asked in a suit filed recently in the San Francisco Superior Court by Mrs. Belle Ross as guardian of Thomas Patterson Ross, San Francisco architect and clubman, for injuries received on October 17, 1922, while on a trip of inspection of the Union League club building, then under construction. The contractors, S. D. Le Clair, H. H. Larsen and H. H. Larsen and Company, who were in charge of construction, are made defendants in the action. Since the accident, Mrs. Ross alleges that the architect has lost the power of speech and has become incompetent mentally. The disability, it is set forth, is permanent.

U. C. Dormitory Plan

Mr. Robert Sibley, executive manager of the California Alumni association, was the speaker at a recent meeting of the University Dormitory committee in Wheeler Hall, University campus.

Mr. Sibley urged that a definite dormitory plan, in line with the Phoebe Hearst plan for the University campus, be in readiness for presentation to alumni, who will gather at Berkeley for Homecoming Week, November 22-24.

Modesto Church

Plans have been completed, but construction will not start until spring, for a Class C brick church to be erected at I and 16th streets, Modesto, for the M. E. Church Society. The edifice will seat 1000 persons, and will cost $100,000. W. H. Hubbert of Modesto is the architect.

Architect Moves Offices

Mr. John Graham, architect, formerly located in the Smith building, Seattle, is now definitely located in the New Dexter Horton building, Third avenue and Cherry street, Seattle, Wash.

To Design and Build

The firm of Trewhitt-Shields Company has been incorporated in Fresno, with a branch office in Los Angeles, for the purpose of designing and erecting new buildings. Mr. H. Rafael Lake, formerly a practicing architect in San Francisco, has become associated with the company, in charge of its architectural department. New work in the office of the firm includes a one-story and basement concrete and brick store building, having 16 stores, and covering area 150x150, to be erected in Fresno for Mr. C. H. Cobb; a three-story concrete warehouse addition to the Benham Ice Cream Company's plant in Fresno to cost $60,000; a one-story and basement concrete warehouse, Fresno, for the United Warehouse Company (Coates & Traver, architects) to cost $65,000; and a one-story basement and mezzanine brick front department store building at Selma for the Kutner-Goldstein Company.

Masonic Buildings

Architect Carl Werner of San Francisco is busy on the working drawings for the new $1,000,000 Scottish Rite Cathedral to be erected in Oakland next year. Mr. Werner is also preparing plans for a Masonic Temple at Santa Barbara and he is taking figures for a Scottish Rite cathedral in San Jose, the latter to cost $200,000.

Architect Narbett Busy

New work in the office of Architect James T. Narbett, Richmond, includes a new Masonic Temple for Richmond, a one-story brick store building at Calistoga, a one-story hollow tile store building at Richmond, and a hollow tile school house at Armida Park, for the Armida Park and Moraga School District, to cost $16,000.

Palo Alto Hotel

Plans are being prepared by Architects William H. Weeks and Birge M. Clark, associated, for a three-story reinforced concrete hotel, having 62 rooms and eight stores, to be erected on Hamilton avenue, Palo Alto, for Mr. A. B. Peterson and associates. The estimated cost is $150,000.

Two Elks Buildings

Plans for two buildings for Elks Lodges, one in Hanford to cost $100,000, and the other in Tulare to cost $125,000, are being prepared by Architects Swartz & Ryland, Rowell building, Fresno. Construction of both buildings will start in the spring.

Limestone Director Urges Public Building Plans

By EDWARD JEROME DIES

AMERICA'S continued prosperity can be materially aided by federal and state governments through immediate formulation of public building plans, Mr. R. M. Richter, a director of the Indiana Limestone Quarrymen's Association, declared in an address before 30 state governors in Bedford, Ind., on October 17.

The governors' party, motoring from Indianapolis to West Baden for the annual conference, had just inspected huge quarries in the district which furnishes a third of all the building stone used in the United States. In spite of a steady rain, they mounted flatcars for a close-up view of a gigantic demonstration which included the quarrying of several 200-ton blocks. The party was headed by Governor McCray of Indiana, and Governor Gifford Pinchot, Pennsylvania, was one of the most interested spectators.

"It has been stated," said Mr. Richter, speaking as representative of the industry at a luncheon tendered the governors at the Greystone in Bedford, "that public building projects have been delayed because of the tremendous commercial demand. In time, however, the pendulum will swing back. It is then that the federal and state governments should be ready with definite progress, the quick consummation of which will prove highly beneficial to the federal government, the various commonwealths and to the public generally.

"America's commercial building program is in full swing. There is every reason to anticipate its continuance on a sound, healthy basis. Right now this district which has furnished the material for many of your state capitols, universities, banks and business structures is sending out some 2000 cars of material a month. From that you can visualize the building situation. The limestone district in which more than $25,000,000 is invested, shipped out 25,000 cars last year, and expects to exceed that mark this year.

"The building industry is thriving today for the simple reason that railroads again are able to handle shipments expeditiously. A total of a million cars a week are being moved by the railroads, and through judicious effort the roads have solved the car shortage problem, which is to their high credit.

"The building industry has its problems. And since it is second only to agriculture in point of magnitude, its problems become public problems. The industry has asked little aid in a governmental way, but it has striven to obtain governmental co-operation, and no better co-operation can be given now than the early formulation of your future building programs."

After pointing out that the enormous output of the quarrying district was due to the highly developed machinery, Mr. Richter said that virtually all labor now is native, and that less than 500 men in the entire district are common laborers. He also stated that fully 75 per cent of the stone quarried is shipped to other cities around the country for finishing.

"Thus the Indiana limestone district provides constant work for thousands of men throughout the land," he concluded.

Before leaving Bedford many of the governors indicated their intention of following the suggestion of formulating public building plans without delay.

Japanese Architect Heard From

A number of California architects have recently received letters from Mr. B. Ito of Tokyo, Japan, where he has been practising architecture since his graduation in the architectural school, University of California. Mr. Ito's offices were completely destroyed in the fire, including all his fixtures, plans, books, etc. In a letter to Architect W. R. Yelland of Oakland, Mr. Ito states that more than one hundred buildings, including factories, office buildings, schools and residences designed by him, were destroyed in the earthquake and fire. He states that he acted as inspector on two eight-story steel frame office buildings for the Japan Mail Steampship Co., and Japan Oil Co., erected by the George A. Fuller Construction Co. of New York, and that the principal damage done to these buildings was to the curtain walls. One nine-story concrete office building collapsed in the first big shock, according to Mr. Ito, and one hundred and twenty people were killed. He thinks that in future more attention will be paid by architects in Japan to the engineering design of a building than to their architectural treatment.

San Mateo Country Residence

Plans are being completed by Architect Henry Shermund, Hearst building, San Francisco, for a beautiful country home at Atherton, San Mateo county, to cost $70,000. Elaborate landscape gardening is planned, including sunken gardens, pergolas, swimming pool, etc.

SAN FRANCISCO
PUBLIC LIBRARY

Fire Fighting and Street Drainage

By C. K. GIBBONEY

ON SEPTEMBER 17 a fire that rushed down from the wooded hills east of Berkeley before a driving northeast wind, destroyed within two or three hours over six hundred residences and laid waste one of the most beautiful sections of the town. Having still much to lose, Berkeley has since been busily engaged in locking its barn doors before any more horses are stolen. New 16-inch water mains will be installed in the hill districts, a police patrol through the fields and woods on the east of the town will supplement the efforts of property owners to extinguish small blazes which would otherwise become menacing, and wooden shingles for the roofs of houses have been placed under the ban by the city council. One phase of the occurrence, however, which is of great importance to street and road builders, has not been sufficiently emphasized. This is the menace to property and even to human lives involved in the use of wooden bridges and culverts.

In a great forest fire which raged through the lumber regions of Michigan a few years ago, many wooden bridges and culverts were destroyed, and in some instances, the chasms thus produced in the roadways brought about the wrecking of automobiles which were being operated in rescue work and resulted in the deaths of several of the refugees. Happily, no lives were lost in the Berkeley fire, but the ruins afford many examples of the folly of installing culverts made of so short-lived and easily burnable a material as lumber.

The streets of Berkeley still offer many examples of plank box culverts which were placed to carry surface drainage across street intersections. By dint of frequent repairs and replacements they serve the purpose fairly well until a more lasting construction can be substituted, but when the buildings or even grass and bushes near them are destroyed by fire, it often happens that they burn out more or less completely and allow the pavements above them to collapse. Instances of this are shown in the accompanying photographs. These break-downs, of course, constituted serious obstacles to the fire apparatus and to vehicles employed in salvage and rescue work.

On the other hand, a great many part circle culverts of corrugated Armco iron are employed in Berkeley at street and railroad crossings, both in the burned out district and in other sections. None of these suffered from the conflagration.

The contrast between burnable and unburnable culverts is still more striking as seen on Wild Cat Canyon road. This is an ordinary earth highway which runs through the wooded valley on the easterly side of the Berkeley hills. It was in Wild Cat Canyon that the fire originated; and it raged furiously across the ravine and up the wooded slopes toward the city. Numerous small water courses, most of which were dry at the time of

ARMCO PART CIRCLE CULVERTS WHICH HAVE SUCCESSFULLY WITHSTOOD RAVAGES OF FIRE IN BERKELEY'S DEVASTATED AREA.

ARMCO CULVERT WILDCAT CANYON ROAD UNDAMAGED BY THE BERKELEY FIRE.

WARNING SIGNAL, PLACED IN HOLE IN THE ROAD CAUSED BY BURNING OUT OF WOODEN CULVERT ON WILDCAT CANYON ROAD.

BURNED OUT WOODEN CULVERT IN THE AREA DEVASTATED BY FIRE, BERKELEY, SEPTEMBER, 1923.

ARMCO CULVERT ON WILDCAT CANYON ROAD, UNDAMAGED BY BERKELEY FIRE, SEPT. 1923. NOTE CONDITION OF WOODEN HEADWALL.

the fire, were provided with culverts at the points where they intersected the road, these culverts being either of corrugated iron or of redwood planks. So far as can be observed, all of the wooden culverts in the path of the fire were destroyed. In some locations the compacted earth above them managed to retain its position, but in others, it collapsed, forming extremely dangerous holes in the roadway. The corrugated culverts, on the other hand, were practically undamaged, though in some cases their wooden head walls were completely destroyed. It is evident that fire-safe materials are almost as necessary for bridges and culverts as for dwelling houses.

Hayward Apartment House

A $60,000 three-story frame and stucco apartment house is to be erected in Hayward by Mr. Frank A. Leach. The plans are being prepared by the California Builders, 1534 Franklin street, Oakland.

THE QUESTION DRAWER

Edited by
JOHN GRACE

Cost of Class A Buildings

Editor The Architect and Engineer:
Sir:

We are undertaking the preliminary work for a 12-story Class A office building and would greatly appreciate the knowledge of the cost per cubic foot of some one or two of the late office buildings erected, or being erected, in San Francisco, for comparison with our estimate.

Thanking you in advance, we beg to remain,

MAYO, COWELL & BISSELL,
Stockton, Cal. Architects and Engineers.

In regard to the cost of recent building construction in San Francisco, the Fitzhugh building, now being completed at Post and Powell streets, and which is a ten-story structure, is costing approximately 39 cents per cubic foot. The Matson building, a 16-story structure now being completed at the foot of Market street, is estimated to have cost 44 cents per cubic foot. The cost of an office building, of course, depends upon the materials used in the construction of same. The average high-class office building can be built for approximately 42 cents per cubic foot, or $7 per square foot.

Crocker Estate to Build

The Crocker Estate Company is planning to erect a Class A store and office building on the site of the structure which was badly damaged by fire recently on Market street, between Kearny and Montgomery, San Francisco. The plans for the building are being prepared by Architect Louis P. Hobart of San Francisco. The size of the building has not yet been determined.

Architect Goes East

William Mallis of Mallis & Aitken, architects, Lyon building, Seattle, left October 2 for an extended trip through the eastern states, Canada, Great Britain and France, for the purpose of inspecting the latest developments in school buildings. He expects to be gone about three months.

Apartment House

Architects Morrow & Garren, Chronicle building, San Francisco, are completing plans for a four and five story Class C apartment house for Mr. B. Getz, to be built at 550 Larkin street, San Francisco. There will be three stores and 70 rooms. The cost will be approximately $80,000.

Meeting American Society of Mechanical Engineers

THE 44th annual meeting of the American Society of Mechanical Engineers will be held in New York December 3rd to 6th. There will be sixteen technical meetings in addition to the usual presidential address which this year will be followed by the ceremony at which the A. S. M. E. medals will be awarded to Mr. John R. Freeman, Past-President, A. S. M. E., and Mr. Frederick A. Halsey.

The Wednesday evening session of the meeting will be devoted to the subject of Hydroelectric Power. Mr. John R. Freeman, past-president of the American Society of Civil Engineers and of the American Society of Mechanical Engineers, will outline the fundamental principles underlying the economic developments of Hydroelectric Power. The American Society of Civil Engineers and the American Institute of Electrical Engineers will co-operate in the program and each will be represented by a speaker in the discussion.

Another session of general interest will be held Wednesday afternoon, but the subject and the speaker cannot be announced at this time.

The opening day of the meeting will be devoted to the meetings of the council and the administrative committees. The technical session will start on Tuesday. The assignment of sessions has not been completed, but in general it is planned to avoid conflict with the National Exposition of Power and Mechanical Engineering, which will be held simultaneously with the annual meeting. By arranging sessions of interest to power engineers during the mornings of the meetings, this conflict will be avoided as the Power Show does not open until noon each day.

The topics which are to be discussed at the various sessions are given here as an indication of the interest the meeting will have for the members of the Society. The Textile session will discuss the organization and construction of woolen mills and preventing steam losses in finishing plants. At a joint session with the American Society of Refrigerating Engineers, heat transfer and insulation will be the topics. The Gas Power Division will have the solid-injection engine and the economic status of oil engines as its topics. The Power Division will have two sessions, one on methods of measuring water flow and another on heat cycles and boiler plant economics. The Railroad Division is centering on the one subject of modern subway cars and their operation. The Fuels Division and the Materials Handling Division are co-operating in one session on the subject of coal storage in its engineering and economic phases.

The Machine Shop Practice Division will consider the development of modern metal-stamping practice and will hear a progress report of the Research Committee on the present status of the art of cutting metals. The Management Division has a program on the relation of mechanical engineering to management in the metal-working, wood-working and textile industries. The Ordinance Division will consider industrial preparedness plants and will hear a discussion on a technical paper giving the advance in physical measurements in Ordinance Department research. The Aeronautics session will discuss corrosion of aluminum alloys and some commercial problems of the airplane.

In addition to these technical sessions there will be a public hearing on the Power Test Codes for Stationary Steam Generating Units and the Test Code for Locomotives. There will be an open meeting of the special Research Committee on Fluid Meters at which the report of this committee will be discussed. The Steam Table Research Committee will also have a session at which the progress in the research will be recorded.

Engineers Form Partnership

Mr. George J. Calder, for the past ten years actively engaged in the practice of civil and structural engineering in Sacramento, has opened an office at 1010½ 8th street, that city. Some of his recent work includes the California Fruit building, Hotel Land, Hotel Argus, Hotel Sequoia, Goddard's J street theater, Mitau building, Fresno Bee building, Physicians building, court houses at Red Bluff and Quincy, Sacramento Filtration plant, Moreing Field grandstand, and the new Paramount theater, now under construction.

The construction of the new Carquinez highway bridge across the straits between Solano and Contra Costa Counties will be under the direction of Mr. Calder. During the last year and a half he has been resident engineer in charge of the construction of Sacramento's new filtration plant.

The offices in Sacramento will cover all civil engineering problems, and will be in charge of Mr. M. W. Sahlberg, a junior partner, who has been associated with Mr. Calder for the past three years as designing engineer. Mr. Sahlberg was formerly with the Turlock Irrigation District, Mr. F. H. Tibbets of San Francisco, Filtration Division of Sacramento, and State Division of Architecture.

Facts About Contractors' Profits

Day Labor System Suggests Efforts of Man to Save Money by Cutting His Own Hair

By E. EARL GLASS, Secretary So. California Chapter, A. G. C., in the Contractor

NOT long ago we noted an interesting development in the constant effort for efficiency. Some outstanding genius had added a guard to an ordinary razor blade so it would cut hair, and the attractive advertising showed a young man before a mirror, smilingly serving himself a regular "head barber trim." The sales talk made the newer hair-cutting seem quite simple and satisfactory. We were not quite inveigled into trying it, but have seen work that might have been done that way.

Now, there is no question but this was a discovery of vital interest to every man and many women. Untold millions are probably spent for hair-cuts each year, for the barber is found everywhere you go, plying his nefarious business for profit. Here was a fair and logical proposition to save the barber's profit and do it yourself. Yet the almost convincing ads have disappeared from the Saturday Evening Post and the barber shops are still with us, perhaps because the public has a deep-seated conviction that the barber knows his business better than the amateur who would learn hair-cutting at the expense of each job he undertakes. Also, the proposal was that we cut our OWN hair, so we would individually suffer should our heroic effort for economy at any cost prove a mistake.

There are many other enterprises operated solely for profit, yet it seems for some reason that we hear more about the contractor's profit than any other. The writer is an engineer and therefore in a better position, perhaps, than a contractor to make a few statements of fact regarding this important subject.

We know there has always been a persistent propaganda for the day labor method of construction. We have heard it and read it for many years. The almost convincing arguments offered by some engineers and public officials for doing construction work "to save the contractor's profit" may sound plausible to the average citizen, but do not deceive those familiar with the economics of construction projects.

We engineers have seen the unfortunate efforts of numbers of our fellows to branch out as contractors and have come to the conclusion that a man having the peculiar qualifications to succeed as a professional engineer is thereby disqualified by temperament and training to carry on actual construction within the costs necessary to underbid all competitors and yet retain any of that much-maligned profit.

The principal reason for the continued claim for saving when the skilled constructor has been eliminated from construction by the day labor method is that the fallacy of the theory is not willingly divulged by those who have tested it, and it is a very simple matter to juggle cost records so that their position is not questioned. High salvage estimates for equipment, judicious distribution of salaries and other proper charges together with convenient changes of plans and methods can easily brighten the unit cost figures, but the best measure of the method is the customary exhaustion of funds before completion of the work.

As we all know, the contractor is bonded to assure proper completion of the job, strictly according to plans and specifications, regardless of the cost to him or the sufficiency of his estimates.

The public official or engineer takes no such risks upon himself, using public funds and seldom rendering a detailed accounting. The contrast between the two methods is all too evident and the recent enactment of the Breed day labor law in California proves the taxpayer is demanding some protection against irresponsible expenditure of public construction funds.

Responsibility in this sense is generally understood as the ability to furnish a negotiable bond securing the proper completion of the work for a definite figure, something entirely neglected in the day labor method to the serious prejudice of the owner's or taxpayers' interest. Only when such surety is furnished by the proponents of force account work can the two propositions be considered in any way comparable.

And now, getting down to "brass tacks," the amount of the contractors' profit is something which the public should know more about. Some persons have seen fit to represent it as something fabulously rich. Only a bit of common sense is necessary to see that the conditions of the contracting business make this practically impossible.

Despite the monumental service rendered humanity by the skilled constructor in fabricating the works planned by the architect and engineer, which should win for him the honest appreciation of all people, he is subjected to the most keenly competitive of all business relations so that his profit, so-called, or, better, his

compensation for expert service, is often trimmed down to an absolute minimum in the effort to obtain the award against all his competitors.

Is it, then, any wonder that only the most able contractors survive the hazards of this business or that, on any project, the best results are obtained at the least practical cost when the general contractor receives his legitimate profit?

Piedmont Residence

Architect W. A. Newman of San Francisco has completed plans and has awarded a contract at approximately $25,000 for a two-story and basement stucco residence in Piedmont, Alameda county, for Mr. Frederick and Katherine A. Small. Features of the house will be a solarium and conservatory. Terra cotta tile roof will be used.

The Switchboard Installation in the New Standard Oil Building

SWITCHBOARDS in general belong to that class of apparatus which, in the early stages of electrical development, were considered as a luxury and finally came to be regarded as a necessity, second in importance only to the prime movers themselves. Radical changes and improvements have been evolved in the construction and design of these centers of distribution, from the standpoint of flexibility and safety.

The large office building of today has a connected concentrated load equal to and often exceeding that of entire townships, and continuity of service is of prime importance. Capacity to take care of peak loads must be installed and proper switching devices must be provided for the rapid and safe changing over from the various power services feeding the building.

The "Demco" super safety main switchboard, manufactured by the Drendell Electrical & Manufacturing Company, San Francisco, installed in the new Standard Oil building, illustrated in this number, is 30 feet long and accommodates all the various lighting and power feeders in the building. From this switchlfoard emanate the cables to the motor control panels and lighting cabinets throughout the building, from whence they are again re-distributed to their final point of application.

The main switchboard represents the latest development in design, incorporating the highest grade of materials and workmanship available. The front panels are of 3-16-inch steel plates, ornamented with a half round moulding and then finished in a French gray enamel. The rear mounting structure and service panels are of 2-inch slate panels, securely fastened to a heavy steel framework which also acts as a supporting member for pull boxes located both at the top and bottom rear of the main switchboard.

The switchboard is being fed from two power companies. Each company brings in two services from different sources. The Pacific Gas & Electric company is serving all the power loads, such as pumps, elevators and compressors, at 220 volt D. C., whereas the Great Western Power company is serving the lighting section of the building at 110-220 volt A. C.

The service panel of the Great Western Power company is provided with a 3000 ampere circuit breaker, a 3000 ampere double throw main switch and a complete metering equipment. The service panels of the Pacific Gas & Electric company are provided with two circuit breakers, two 1600 ampere main switches and complete metering equipment. Interposed between the two direct current services is a 1600 ampere double throw switch and circuit breaker to take care of the fire pump. As the continuity of service on the fire pump is absolutely essential in case of emergencies, every precaution possible has been taken to meet this condition.

Recording instruments are provided for the checking of the incoming feeders and station type pilots are installed on each service. The various feeder switches are the "Demco" type "T" back connected and of the sweated and pinned construction. The operating mechanisms are of the cored type equipped with rubberoid finish hardwood handles, provided with steel ferrules and with multiple steel members for the permissive release of the fuse compartment. The switches and fuse compartments are interlocked, provision, however, having been made for inspection of fuses under load.

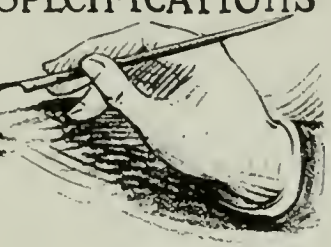
Each feeder switch is in a separate compartment, thus insuring absolute safety in operation.

There are approximately 45 lighting panel boards and cabinets installed in this building, aggregating about 1450 circuits. These are of the Safety Type "Demco" "TN 30" equipped with 30 ampere double pole tumbler switches arranged for Edison plug fuses.

All of the lighting panels, motor control panels and main switchboard were manufactured by the Drendell Electrical and Manufacturing Company, San Francisco.

WRITE IN ON THE SPECIFICATIONS

Buttonlath



THE selection of Buttonlath as the base for the walls of a building is a tribute to the judgment of the architect. Buttonlath is in successful use today in thousands of California homes, factories and office buildings.

BUTTONLATH MANUFACTURING CO.
207 BALBOA BUILDING, SAN FRANCISCO

KENNEDY VALVES

mean satisfied clients

Kennedy Products for Domestic Heating and Sanitary Lines cost no more than ordinary equipment, cause no trouble after being installed, stand more rough use, and last far longer. A few of the Kennedy types are illustrated: The Kennedy Radiator Valve, made straightway, angle, offset, corner, etc., with or without unions; the Kennedy All-Bronze Gate Valve, one of the particularly popular Kennedy types; and the Kennedy Pennie Backwater and Sewer Gas Valve, a sanitary and positive protection that should be on every waste pipe.

The entire Kennedy line of 600 different types & sizes is described in the Kennedy Catalog. Write for your copy.

THE KENNEDY VALVE MFG. CO. ELMIRA, N.Y.

Branches and Warehouses:
New York: 95 John St.; Boston: 47 India St.; Chicago: 228 N. Jefferson St.; San Francisco: 23-25 Minna St.
Sales Offices:
Salt Lake City, El Paso, Seattle

Acts to Promote Responsible Bidding

TO define responsibility as applied to construction companies and to devise a practical means of selecting responsible bidders for a given project is the task that has been undertaken by the Committee on Ethics of the Associated General Contractors. By this procedure, in which, it is believed, engineers and public officials will recognize a benefit to the industry, the association desires to remove the disagreeable controversies that frequently result when engineers disqualify an irresponsible bidder.

In the co-operative work which the Association has been doing with the Joint Conference on Contracts, the American Association of State Highway Officials, the Interdepartmental Board of Contracts and Adjustments, and various local agencies, almost every issue discussed has appeared to have some connection with this question of responsibility. Engineers and public officials have frequently said that they would be glad to adopt certain contract principles if they possessed the means for awarding contracts only to responsible companies. Some of these principles they are unwilling to adopt so long as they are practically obliged to award their contracts to any irresponsible company that can furnish a bond.

If these expressions mean their true convictions, that engineers and public officials do actually desire to eliminate "piker bids" and deal only with responsible companies, work to bring about such conditions may reasonably be expected to result in a gradual easing up on the drastic qualities of contract provisions and in a much higher regard for the construction business on the part of clients and professional men.

The Federal government on special work has used the policy of receiving bids only from companies that could demonstrate their ability to execute the work, and a like procedure has been used on highway work in Kentucky and on the construction of flood prevention work in Mississippi. It is commonly believed that public officials would favor the adoption of some plan whereby they could eliminate irresponsible bidders if they were able to do so without entailing a political fight, a taxpayer's injunction, or other unpleasant features attending the disqualification of a bidder.

Probably the most effective means of doing so is that adopted by the Treasury Department in requiring bidders to show their qualifications before they are given plans for estimating. If the Association can devise some practical plan whereby engineers, architects and public officials can ascertain the responsibility of any company with respect to a given project, many difficulties on both sides may reasonably be expected to disappear.

The Committee on Ethics, in undertaking this important piece of work, is desirous that construction companies throughout the country give it their careful thought, and forward to the Washington office any suggestions bearing on the issue.

The following outline of points involved in the question of responsibility is offered for discussion:

ELEMENTS OF RESPONSIBILITY

1. Financial Strength.

a. A financial statement to indicate the condition of the bidder's business. (A. G. C. Financial Statement.)

b. Statement of funds available for the project.

c. Banking reference.

2. Experience Applying to the Undertaking:

a. Personal experience of construction manager, proprietor, partner or company official in charge of construction.

b. Experience of superintendent now in employ of company, who is competent to execute the work.

c. Experience of superintendent (if not one of the above) who is to be placed in charge of the work.

3. Construction Plant Available for Project:

a. Equipment owned.

b. Equipment that will be rented or purchased.

4. Construction Performance Record.

a. Projects similar in character to the one being let.

b. Projects of any other nature.

c. Projects uncompleted through default.

5. Personal References for Successful Construction Service.

a. Client owners.

b. Practicing engineers and architects.

c. Public officials.

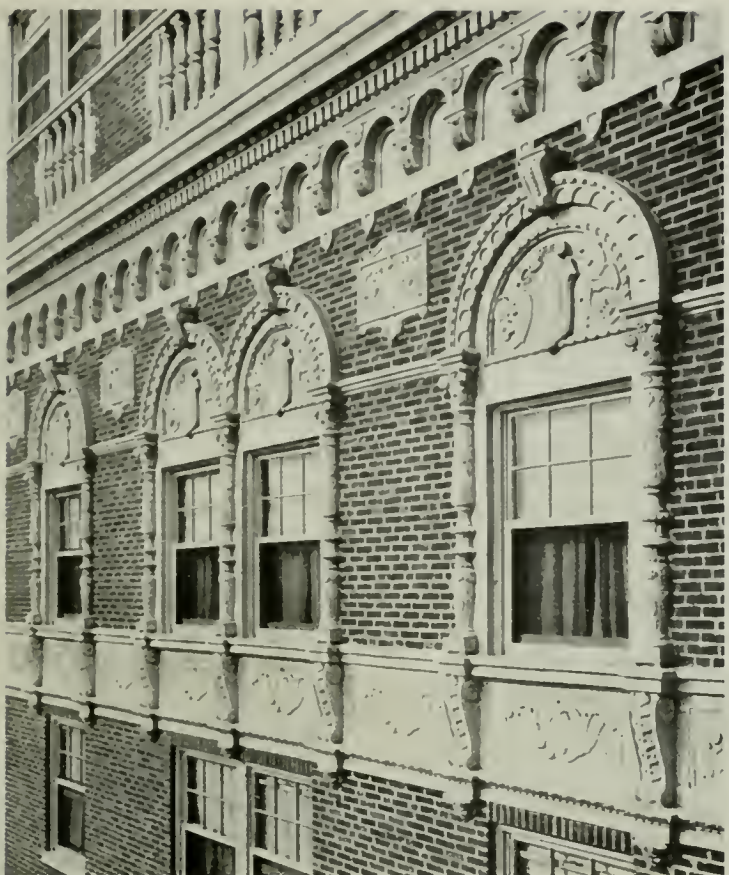
QUALIFYING BIDDERS

(Qualifications of bidders before they are allowed to submit proposals, instead of after bids are received.)

1. Relieves department from the criticism entailed when it rejects the bid of an irresponsible company that may be low.

2. Removes principal ground on which a disqualified bidder can secure a taxpayer's injunction; namely, the award of a contract at a higher price.

3. Qualification can probably be handled more judiciously by the department



Detail of Terra Cotta, Upper Stories, Chase Hotel, St. Louis, Mo. Preston J. Bradshaw, Architect

CONSIDER THIS SOLUTION

ARCHITECTURAL dignity with an appropriate touch of elegance is often difficult to attain in hotel design under the limits of contemplated investment. Decorative embellishment of the exterior must be accomplished economically in enduring material.

Mr. Bradshaw solved the problem by the use of unglazed cream-colored Terra Cotta throughout for all ornamental enrichment. Let us send you data for specifying effectively. Address **National Terra Cotta Society**, 19 West 44th Street, New York City.

TERRA COTTA

Permanent Beautiful Profitable

when bidders have no checks on deposit and no proposals in the possession of the department.

4. The expense of field investigation and estimating is saved to the bidder who cannot qualify for a particular project.

5. Disqualification would probably receive less publicity and create less resentment in the disqualified ones.

6. With the issue of bonding not yet raised, the department would doubtless be free from pressure of bonding companies in the matter, and also from the influence of politicians or officials who might be interested in the placing of the bond.

Should Mechanical Trades be Separate?

Arguments in Favor of the General Contractor Handling all Trades

SHOULD mechanical trades be handled by a separate contract or incorporated in the general contract? That is a question that often causes discussion among contractors and architects and has advocates of both sides. One of the best arguments that we have seen in favor of the general contract is the following brief issued by the St. Louis Master Builders Association, and filed with the Associated General Contractors of America. It has been prepared by the Master Builders Association in reply to testimony on separate contracts for mechanical equipment submitted to the Interdepartmental Board of Contracts and Adjustments of the United States, April 20, 1923:

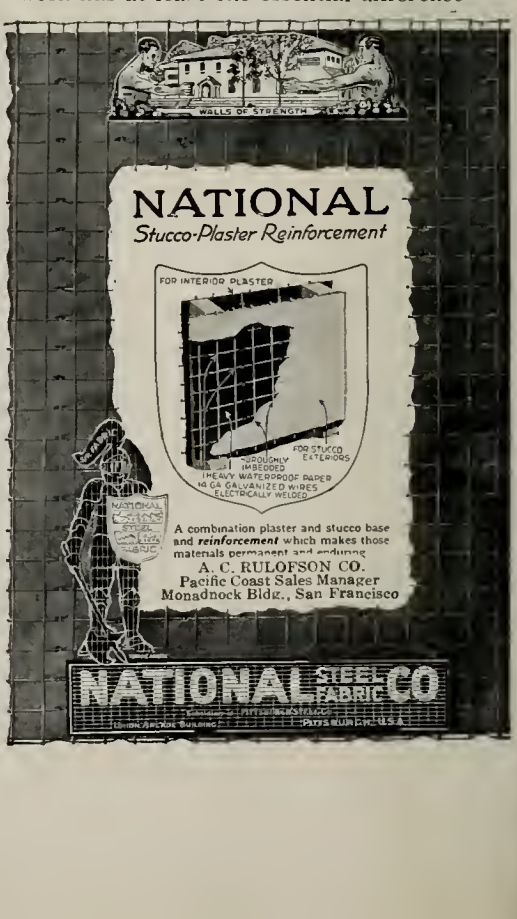
It is not a fair statement to cite special cases indicating that separate bids for mechanical equipment represent a material saving over the lump sum of a general contractor's bid, because generally the mechanical sub-contractors, having the attitude of mind stated in the brief, seldom give the general contractor the low sub-bids where sub-bids are also requested direct by the designer or owner, and therefore such prices are not comparable.

They claim an uncertainty arising from double supervision of the general contractor and the designer. Double supervision is not a correct term, as the function of a general contractor is to arrange a proper sequence of work, to secure reduction in cost due to general contractor's knowledge of market trends and conditions, as well as material costs, to prevent delays in completion of the structure and to eliminate friction among the various sub-contractors working on the site. The function of the designer in this connection may be stated to be that of supervising the installation in order to insure proper interpretation of plans and specifications.

GENERAL CONTRACTOR KNOWS TRADES

The statement that a general contractor may be a stranger as to the mechanical features of the equipment work is seldom true in practice, as the ordinary installations in a building are not so unusual that a general contractor is not thoroughly familiar with the requirements. It might be stated with equal force and perhaps with more specific effect that the staffs of mechanical sub-contractors themselves being necessarily limited, due to volume of business, seldom contain the mechanical engineers mentioned. In other words, the general contractor, through the greater variety of his experience, is frequently more partial than the practical man in charge for the sub-contractor, and has the proper relationship of the sub-contractor to the whole structure.

That mechanical sub-contracts have been awarded on certain private work is not necessarily a reason for inclusion of such practice in public work. Private work has at least one essential difference


WALLS OF STRENGTH
NATIONAL
Stucco-Plaster Reinforcement
FOR INTERIOR PLASTER
FOR STUCCO EXTERIORS
THOROUGHLY IMBEDDED
HEAVY WATERPROOF PAPER
16 GA GALVANIZED WIRES ELECTRICALLY WELDED
A combination plaster and stucco base and reinforcement which makes those materials permanent and enduring
A. C. RULOFSON CO.
Pacific Coast Sales Manager
Monadnock Bldg., San Francisco
NATIONAL STEEL FABRIC CO

THE BON AIR VANDERBILT
AUGUSTA, GEORGIA

Messrs. McKim, Meade & White, New York, and Willis Irvin, Augusta, Associate Architects.

WATERPROOFED WHITE MEANS MEDUSA

PERMANENCE, while a cardinal virtue of portland cement stucco, is but one of the many good features that commend it to Architect and owner alike, when planning hotels and other business structures. By specifying Medusa Waterproofed White Cement for such service, you assure for your client first of all, walls that will remain *permanently dry*. Dampness can never penetrate the stucco, because the Waterproofing and the White Cement are thoroughly ground together at the mill, forming an inseparable element. In addition, Medusa Waterproofed White Cement is *truly non-staining*. When the stucco is properly prepared and applied, it retains its body whiteness indefinitely.

Each year brings more and more varied uses for Medusa Waterproofed White Cement. Each year demonstrates the enduring, serviceable qualities of work already done in this all-utility material. Valuable data will be found in our Catalogs in Sweet's; the Medusa Book supplements these with more elaborate specifications. We shall be pleased to send the Book upon request.

Waterproofed White Means Medusa

THE SANDUSKY CEMENT CO., Dept. P, Cleveland, Ohio

Medusa Stainless White Cement—Plain and Waterproofed —and Medusa Waterproofing are carried in stock and sold by leading building-supply dealers in California, Oregon and Washington.

MEDUSA
WATERPROOFED
WHITE CEMENT

from public work in that it need not conform to specific legal requirements or technicalities, that only the individual owner need be satisfied instead of all the public, and that frequently separate sub-contracts are awarded as a matter of convenience in cases where it is desired to start work in advance of full completion of detail plans and specifications, or where the owner desires to select particular sub-contractors for a particular work.

ARCHITECT'S FEES

The stated approval of this method by leading architects and certain building associations may imply that it is merely the present practice of some architects and may be merely tentative and not applied by any architect to all his work. While not in the least criticizing the practice or questioning the motives of architects, it is expressly stated in Appendix "D," Schedule of Charges of the American Institute of Architects, issued in 1920, "that the architect is to be allowed reimbursement of the costs of the services of heating, ventilating, mechanical and electrical engineers," so that full designing charges are thus properly included in the work of the architect and included in his fee to the owner, so that the owner should not be required to pay for additional engineering costs to be supplied by the mechanical sub-contractors.

In addition, the schedule further states that "the basic rate of the architect's fee applies when all the work is let under one contract. Should the owner determine to have certain portions of the work executed under separate contracts, as the architect's burden of service expense and responsibility is thereby increased, the rate in connection with such portions of the work is greater (usually by the per cent) than the basic rate. In any event, however, the basic rate without increase (6 per cent) should apply to contracts for any portion of the work on which the owner reimburses the engineers' fees to the architect."

The above quotations from this schedule are cited in order to show the equity of payment by the owner for such services, expense and responsibility occasioned by the inclusion of work of the mechanical sub-contractors, whether such service, expense and responsibility is furnished by the general contractor or the architect.

The argument is made that the mechanical sub-contracts are of peculiar importance in a structure as affecting safety, comfort and convenience, but we see no reason why these features affect in a lesser degree such other features of a

WYBRO
Veneered Panels

MAKE

BEAUTIFUL INTERIORS

Done in Tudor design—the entire walls and ceilings panelled and battened into squares, or the ceilings staggered, Wybro Panels

give a handsome, substantial finish, suitable to any home

Inexpensive to install. No lath, plaster or wall paper required.

Wybro Veneered Panels are of the highest quality. Available in all hardwoods and Oregon Pine.

Specify WYBRO *Panels*

Any dealer can supply them

WhiteBrothers

DISTRIBUTORS OF WYBRO PANELS

Hardwood Headquarters

5th and Brannan Sts San Francisco

PALO ALTO UNION HIGH SCHOOL BUILDING Allison & Allison, *Architects*
EQUIPPED WITH KEWANEE STEEL BOILERS — OIL BURNING — INSTALLED 1918

For School Heating

Specify

A KEWANEE OR EQUAL AND YOU HAVE SAID IT ALL

Mental Concentration Requires Physical Comfort

Proper Heating is an Essential in Every School Building

KEWANEE STEEL BOILERS ARE BUILT TO MEET EVERY REQUIREMENT IN SCHOOL HEATING

Low Pressure Heating Boilers *High Pressure Power Boilers*

KEWANEE BOILER COMPANY

KEWANEE, ILLINOIS

SAN FRANCISCO BRANCH OFFICE: 216 PINE STREET
LOS ANGELES OFFICE: 420 E THIRD STREET

building as the proper installation of floors, windows, roofs, etc.

The statement is made that these sub-contractors do not receive fair treatment from the general contractor, due to his method of shopping and delayed payments. That such practice is occasionally the fact we do not dispute, but we do not believe that such practice is generally current among the best contractors. And of such occasions when it is true, we wonder whether the general contractors are alone to blame, or whether the sub-contractors have not themselves instituted a practice of under-cutting their quotations if the general contract is awarded to a general contractor. Certainly no sub-contract can be made without the consent of both parties.

Where sub-contractors render the stipulated service we believe that general contractors do allot them the proper share of monthly payments. Such allotment is not only provided for in the standard forms of contracts universally recommended by the American Institute of Architects, but certainly where such practices exist they can be readily corrected by directing the matter to the attention of the architect. We believe it a fair statement to say that if sub-contractors, in their anxiety to undertake work, reduce their original bid beyond a fair remuneration to themselves, they do it knowingly and frequently because they know that general contractors, through experience and keeping of unit costs, have a very fair knowledge even of sub-contractors' costs and may necessarily upon occasion do the work himself in order to get fair prices for his client, the owner.

GENERAL CONTRACTOR'S RESPONSIBILITY

One of the main features in connection with awarding a general contract is the statement that time is of the essence of the contract, and a per diem penalty is usually insisted upon by the owner as agreed liquidated damages for non-delivery of the complete structure. One of the greatest problems, and therefore services, of the general contractor is to so arrange the sequence of the work of the various crafts involved in the entire structure as to insure its completion on the desired rate.

The awarding of segregated contracts of any kind, without excepting mechanical sub-contracts, divides the responsibility and makes completion of a structure ready for use or occupancy by the owner very unsatisfactory indeed. The plumbing, heating, electrical and sprinkling work in the average building seldom exceeds 15 to 20 per cent of the total construction costs. In addition to the four

400 Hauser Casement Windows

used in the Beck Apartments, Powell, between Pine and Bush streets, San Francisco.

Specified by Architect M. V. Politeo

DURABLE, EFFICIENT ECONOMICAL

HAUSER WINDOW CO.

Factory, Office and Show Rooms:
1362 Harrison Street, San Francisco

Phone Hemlock 1062

H. RUMPF

CONTRACTING DECORATOR
CUSTOM BUILT FURNITURE
DRAPERIES AND FURNISHINGS

School and Theater Equipment
Drop Curtains, Draperies

Specializing in Furnishings for Hotels, Lodges, Clubs, Steamships, Apartment Houses.

Estimates Furnished

567 HOWARD STREET, SAN FRANCISCO, CALIF.

What is ATLAS WHITE PORTLAND CEMENT *and what are its possibilities for you*

Atlas White's possibilities in the line of sculpture are indicated in Lorado Taft's Fountain of Time in Chicago.

For laying up exterior or interior marble the non-staining feature of Atlas White is important.

Residences can have the individuality of their general lines translated into their surface finishes with Atlas White.

A TRUE Portland Cement, yet pure white in color and non-staining, Atlas White Portland Cement is useful wherever grey Portland Cement can be employed. In addition it has innumerable advantages possessed by no other material.

For stucco, Atlas White makes possible an infinite variety of color tones and textures. For artificial stone, or any cast work such as architectural trim or garden furniture, it makes possible any surface finish and gives proper color value where mineral pigments or colored aggregate is introduced.

Because it is non-staining Atlas White is useful in mortar for backing up, laying and pointing marble, limestone or fine textured stone of any kind, for laying up brick, tile, terracotta, etc. For interior or exterior work, Atlas White Portland Cement is an ideal medium for the architect's expression.

The architect and builder can secure exact information regarding the use of Atlas White. Any of the following named books will be sent on request.

The Stucco House
Guide to Good Stucco.
Non-staining Mortar for Pointing, Setting, Backing.
Cast Stone.
Appropriate War Memorials.
Atlas Handbook of Concrete Construction.

The largest single stucco job in the world, the Fifth Avenue Hospital of New York, for permanence as well as beauty chose Atlas White.

THE ATLAS PORTLAND CEMENT COMPANY

CHICAGO — 25 BROADWAY NEW YORK — BIRMINGHAM

PHILADELPHIA BOSTON ST. LOUIS DES MOINES
OMAHA BUFFALO KANSAS CITY

per cent covered in paragraph 5, the contractors may add one per cent additional for services of night watchman, provision of storeroom space, cost of fuel and water for additional temporary heat in buildings or to prevent freezing up of pipes, patching of walls and floors behind pipes, removing debris, furnishing adequate fire and contingent liability insurance and overhead.

Assuming a 15 per cent cost item for mechanical installations, the fee of the general contractor of five per cent on 15 per cent is three-fourths of one per cent of the total cost. If the total building cost is 100 per cent, the taxes, interest, etc., on the building are 10 per cent a year; and if the land cost is 20 per cent, with a seven per cent tax and interest charge per annum, the carrying charges for the land and building would be 11.4 per cent for 52 weeks, or 0.22 per cent per week, which is equivalent to saying that the contractor's commission of three-fourths of 1 per cent will be equivalent to 3.4 weeks' carrying charges, if the contractor performed no other service, which of course is not the case.

SEPARATE CONTRACTS CONFLICT

The functions of general contractors have been so thoroughly recognized for some centuries that it seems unnecessary to reiterate the point that the division of responsibility for satisfactory completion of a project is unwarranted and uneconomical. That the majority of architects concede that one responsibility is essential is warranted by the fact that even where they receive separate sub-bids on mechanical work, they require their inclusion in the contract of the general contractor, thus practically nullifying the arguments of the sub-contractors against such practice. It is natural that employees look to their employers for their remuneration, and sub-contractors who receive remuneration direct from an architect or an owner consequently pay little heed to the requests of the general contractor. Thus practically, though perhaps unconsciously, they are working against their client-owner's best interests when they do not co-operate and occasion frequent weakening of structural members by cutting and patching and additional cost due to the need of extra service, or delays of completion of the entire building. Carried to an extreme and their arguments applied to every sub-contract, there would be continuous conflict and confusion of interest on a building, which cannot fully be co-ordinated by an architect or engineer who has not the practical field experience or financing responsibility at stake.

Finally, it would seem that the very best evidence why the general contractor should handle all work in connection with a structure is the fact that the sub-contracting parties in interest seemingly desire that their responsibilities be as limited as possible and that their own interests would be paramount to the interests of the public. As general contractors who recognize quality of workmanship and service, we are perhaps better fitted than any other branch of the construction industry to recognize the merits and abilities of the mechanical sub-contractors, and we are glad on this occasion, as on many others, to reiterate that recognition and to award them full credit for excellent work well done.

AN ADDED COMPETITION

Frequently the general contractor, in making up his total bid, does not include the quoted figures of the sub-contractor, but on his own responsibility determines a figure, which in his judgment is correct, although later it may not prove so. At any rate the owner has received not only the competition of the sub-contractors, but the competition of the general contractor as well.

In conclusion it should be stated that the mechanical sub-contractors have in many cities made tacit agreements with their craftsmen whom they employ not to work for others than the mechanical sub-contractors, and sometimes only those sub-contractors who belong to a certain group. Such action can almost be construed as restraint of trade, which may be further illustrated by the fact that where general contractors have made sincere efforts to adjust wages of the building crafts in accordance with fluctuating cost of living, these mechanical trades have not co-operated in such movements. An attitude theretore of such a group starting with its labor, frequently attempting to control supply of material solely to themselves, now seeks further restriction by trying to close the sources receiving their bids. As general contractors we cannot commend such a spirit or agree upon the merit of such tendencies.

Robert Trost Awarded Contract

A contract has been awarded to Robert Trost, 26th and Howard streets, San Francisco, to build a two-story reinforced concrete gymnasium for the State Normal School at San Francisco. The building will cost approximately $60,000.

Los Angeles Office

Barrett & Hilp, San Francisco building contractors, have opened a Southern California office at 906 Bank of Italy building, Los Angeles.

Choosing the Proper Heavy Service Floor

By G. H. OYER

FROM the standpoint of the engineer, every building ever erected presented three vital problems: Foundations, Floors and Roof.

The integrity of the building, the safety and life of the structure itself depends upon adequate foundations. The preservation of the building and its contents depends upon the roof and the efficiency of the building and the economy of upkeep costs depends upon the floors. There is no abrasive wear on foundations, footings, columns, walls, partitions or ceilings. On the contrary, all the abrasive wear is concentrated on the floors.

The following conclusions are therefore axiomatic: Foundations must be sufficiently strong to support the structure without designs of failure; the roof must offer perfect protection to the building also its contents (the contents often times being more valuable than the building itself), while the floors must provide a resilient working surface that is both smooth wearing and slow wearing. For on its ability to wear smoothly and slowly depends not only the lastingness of the floor but economy in transportation.

Let us then consider the relative merits of various types of heavy service floors in common use, namely, concrete, maple or oak and block flooring.

Perhaps the one advantage of concrete floors is low initial cost. But when the owner takes into consideration the short life of the floor and the high maintenance cost due to the concrete disintergrating and dusting under constant trucking, he finds that this low cost really entails heavy overhead and greatly increased operating expenses. Again, fatigue induced by working over a cold, unyielding floor is responsible for production waste which is lost sight of in nearly every instance because difficult to measure.

A maple or oak floor is resilient, pleasing in appearance, and when new is smooth and trucking can be done over it with minimum effort. However, with the fibres exposed sidewise to wear, heavy trucks or even light loads on small wheels or casters soon begin their destructive action on the wood and it is not long before replacements are necessary.

Getting into the subject of block flooring, we find it is a recognized fact that Southern pine on end will withstand hard wear indefinitely. Combine resiliency with durability and two requisites of the "ideal factory flooring" are secured. Yet, in ordinary wood paving one essential—lasting smoothness—is lacking.

James McClatchy & Company, owners of the Sacramento Bee and Fresno Bee, recently installed an end grain floor in the composing and press rooms of their new Fresno plant, which undoubtedly combines all the advantages of other heavy service floors. The name of this floor "Bloxonend" is itself distinctly descriptive. The blocks are literally set on end so that the end of the grain is the surface of the floor. With Bloxonend there are no loose blocks. The material is furnished in built-up strips nearly 8 feet in length with small kiln dried

Composing Room, Fresno Bee

Southern pine blocks dovetailed onto baseboards. Before shipment, these built-up strips are milled to exact flooring size and shape. When the flooring is laid, splines not only key the butting ends of the sections and end joints, but hold the adjacent sections or units to true surface as in heavy matched flooring. Ordinarily this type of flooring is laid over a pitch cushion directly on the concrete slab, thus eliminating embedded sleepers or nailing strips.

Lasting smoothness, resiliency and long life combined with a minimum of repair or maintenance costs—these are the advantages claimed for Bloxonend by the manufacturer. The fact that over 80 per cent of their business comes from repeat orders (users in most case being leaders in their respective fields) is perhaps the most suggestive from an engineering standpoint that can be brought out regarding this unusual heavy service floor.

Automobile Subway

Construction of the proposed automobile and vehicle subway under the ferry loop at the foot of Market street, San Francisco, is to proceed at once, a contract for the work having been awarded by the State Harbor Commission to the Tibbitts-Pacific Company for approximately $238,000.

Builders

ARE you in the market for WIRE NAILS?

It will pay you to submit your specifications to us.

We are carrying a large warehouse stock and can quote for mill shipment.

Inquiries will receive prompt attention

EDW. L. SOULE CO.
RIALTO BUILDING
SAN FRANCISCO

What Does It Mean to You

—when a manufacturer trade marks his product?

It means this—

He is maintaining QUALITY standards—standing squarely behind his products—protecting you and himself from inferior merchandise.

When specifying hardwood, say

"BATAAN" MAHOGANY

Lumber, Veneers, Plywood Panel
Hardwood Flooring

CADWALLADER-GIBSON COMPANY
5th and Brannan Streets
San Francisco, Calif.
Phones Douglas 1737-8

MATSON BUILDING
San Francisco, Cal.
Bliss and Faville, Archt's

ORIGINATORS
OF
SASH CHAINS

18,000 feet of our No. 1 "Red Metal" Sash Chain used in the Matson Building, San Francisco, Cal., Bliss and Faville, Architects. Our chains have also been installed in the new Los Angeles Biltmore Hotel and the Fitzhugh Building, San Francisco.

"Giant Metal" Sash Chain. "Red Metal" Sash Chain. Steel Sash Chain.

SEND FOR SASH CHAIN CATALOG A1.
SEE PAGE 1253, SWEET'S 18th CATALOG.

THE SMITH AND EGGE MFG. COMPANY
BRIDGEPORT, CONN.

RAWLINS & SMITH — 604 Mission Street, San Francisco; 618 American Bank Bldg., Los Angeles — COAST AGENTS

Present Cost of Building Materials

THESE quotations are based on reliable information furnished by the San Francisco material houses. Date of quotations, November 20, 1923.
All prices f. o. b. cars San Francisco or Oakland For country work add freight and cartage to prices given.

Bond—1½% amount of contract.

Brickwork—
Common, $35.00 per 1000 laid.
Face, $75.00 per 1000 laid.
Enamel, $150.00 per 1000 laid.
Common, f. o. b. cars, $15.50, plus cartage.
Face, f. o. b. cars, $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (Delivered to building in carload lots.)

12x12x3 in.	$102.00 per M
12x12x4 in.	115.00 per M
12x12x6 in.	160.00 per M
12x12x8 in.	165.00 per M

Hod carriers, $6.50 per day.
Bricklayers, $10.00 per day.
Lime—$2.25 per bbl.; carload, $2.15

Composition Floors—24c to 50c per sq. ft. In large quantities, 24c per sq. ft.

Composition Stucco—$1.90 to $2.10 per sq. yard (applied).

Concrete Work (material at San Francisco bunkers)—

No. 3 rock	$2.15 per yd.
No. 4 rock	2.30 per yd.
Niles pea gravel	3.50 per yd.
Niles gravel	2.35 per yd.
Niles top gravel	2.75 per yd.
City gravel	2.15 per yd.
River sand	1.75 per yd.
Delivered bank sand	1.00 per yd.

SAND

Del Monte	$1.25 to $1.50 per ton
Fan Shell Beach (Car lots, f. o. b. Lake Majella)	$2.50 to $3.00 per ton
Swedish cement	$2.68 per bbl.
Belgian cement	2.65 per bbl.
Cement (f. o. b. cars)	3.01 per bbl.
Rebate for sacks, 10c each.	
Atlas "White"	$ 9.75 per bbl.
Medusa "White"	$ 9.95 per bbl.
Forms, Labors	$30.00 per M

Wage—

Concrete workers	$5.00 per day
Cement finishers	8.50 per day
Laborers	5.00 per day

Dampproofing—
Two-coat work, 25c per yard.
Membrane waterproofing—4 layers of P. B. saturated felt, $5.25 per square.
Hot coating work, $2.00 per square.
Wage—Roofers, $8.00 per day.

Electric Wiring—$6.00 to $10.00 per outlet for conduit work (including switches).
Knob and tube average $3.00 to $5.50 per outlet.
Wage—Electricians, $8.00 per day.

Elevators—
Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in 4-story bldg., $3250; direct automatic, about $3000.

Excavation—
$1.25 per yard, if sand. Teams, $10.00 per day. Trucks, $21 to $30 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—
Ten-foot balcony, with stairs, $105.00 per balcony.

Glass—(Consult with manufacturers.)
21 ounce, 16c per square foot.
Plate, $1.10 per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. ft.
Obscure glass, 28c per square foot.
Note—Add extra for setting.
Wage—Glaziers, $8.00 per day.

Heating—
Average, $2.25 per sq. ft. of radiation, according to conditions.
Wage—Steamfitters, $9.00 per day.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.
Wage—Iron workers, bridge and structural, $9.00 per day.
Architectural iron workers, $7.00 per day.

Lumber—(Prices delivered to bldg. site)
Common, $39.00 per M (average).
Com'n O.P. (select, avrg.....$42.50 per M

Flooring—

1 x 6 No. 3—Form lumber	$25.00 per M
1 x 4 No. 1 flooring	68.00 per M
1 x 4 No. 2 flooring	62.00 per M
1 x 4 No. 3 flooring	48.00 per M
1 x 6 No. 2 and better flooring	62.00 per M
1¼ x 4 and 6 No. 2 flooring	65.00 per M

Slash grain—

1 x 4 No. 2 flooring	56.00 per M
1 x 4 No. 3 flooring	50.00 per M

No. 1 common run to

T. & G.	$40.00 per 1000
Lath	6.50 per 1000

Shingles—(Add cartage to prices quoted)

Redwood, No. 1	$1.10 per bdle.
Redwood, No. 2	.90 per bdle.
Red Cedar	1.25 per bdle.

Building Paper—

1 ply per 1000 ft. roll	$6.25
2 ply per 1000 ft. roll	9.60
3 ply per 1000 ft. roll	14.55
Sash cord com. No. 7	1.25 per 100 ft.
Sash cord com. No. 8	1.40 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.30 per 100 ft.
Sash weights cast iron	60.00 Ton
Nails, $4.25 base.	

Hardwood Flooring—

⅝x2¼" T & G Maple			$137 M ft.
1⅛x2¼" T & G Maple			140 M ft.
⅞x3½" Sq. Edge Maple			116 M ft.
	⅝x2¼" T&G	¾x2" T&G	⅞x2" Sq. Ed
Clr. Qtd. Oak	$179 M	$124.00 M	$156 M
Sel. Qtd. Oak	135 M	92.50 M	114 M
Clr. Pla. Oak	140 M	92.50 M	114 M
Sel. Pla. Oak	121 M	80.00 M	97 M
Clear Maple	135 M	81.00 M	
Orion	140 M	100.00 M	100 M
Bagac	130 M	90.00 M	90 M
Laying and Finishing	16c ft.	15c ft.	13c ft.

Wage—Floor layers $9.35 per day.

Millwork—
O. P., $100 and up per 1000. R. W., $120 and up per 1000.
Double hung box window frames, average) with trim, $8.00 and up, each.
Doors, including trim (single panel), $10.50 and up, each.
Doors, including trim (five panel), $8.50 each.
Screen doors, $3.50 each.
Cases for kitchen pantries seven feet high, per lineal foot, $7.50 each.
Dining room cases, $8.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy rraming (average) $16 per m.
For smaller work, average, $28.00 to $35.00 per 1000.
Wage—Carpenters, $8.00 per day.
Laborers—$5.00 per day.

Marble—(Not set), add 40c to 60c per ft. for setting.

Columbia	$1.60 sq. ft.
Alaska	1.60 sq. ft.
San Saba	3.15 sq. ft.
Tennessee	2.00 sq. ft.
Verde Antique	3.75 sq. ft.
Westfield Green	3.50 sq. ft.

Wages—Marble setters, $8.00 per day; helpers, $5.50 per day. Marble polishers and finishers, $6.00 per day.

Painting—

Two-coat work	30c per yard
Three-coat work	45c per yard
Whitewashing	5c per yard
Cold water painting	9c per yard

Turpentine, $1.20 per gal. in cases and $1.05 per gal. in tanks.
Raw Linseed oil....$1.05 per gal. in bbls.
Boiled Linseed Oil.. 1.10 per gal. in bbls.
Pioneer white and red lead, 11¾c lb. in one-ton purchases; 12c lb. for less than 500 lbs.
Wage—Painters, $8.00 per day.
Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.50 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Pipe Casings—14" (average), $7.50 each.

Plastering—(Including Lathing)
Interior, on wood lath, 65c per yard.
Interior, on metal lath, $1.25 per yard.
Exterior, on brick or concrete, $1.30 per yard.
Portland White, $1.75.
Interior on brick or terra cotta, 60c to 70c per yard.
Exterior, on metal lath, $1.85 to $2.25 per yard.
Wood lath, $7.00 a yard per 1000.
Metal studding, $1.25 to $1.50 per yard.
Suspended ceiling and walls (metal furring, lathing and plastering), $2.00 per yard.
Galv. metal lath, 33c and up per yard, according to gauge and weight.
Lime, f. o. b. S. F. warehouse, $2.50 bbl.
Lime, bulk, per ton of 2000 lbs., $19.50
Hardwall plaster, $15.40 per ton, f. o. b. warehouse. (Rebate on sacks, 15c.)
Finishing plaster (carload lots), $19.00.
Hydrate of lime, $19.50 per ton, f. o. b. warehouse.
Wage—Plasterers, $10.00 per day.
Lathers, $8.00 per day.
Hod carriers, $7.00 per day.

Plumbing—
From $70.00 per fixture up, according to grade, quantity and runs.
Wage—Plumbers, $9.00 per day.

Reinforcing Steel—
Base price for car load lots, $3.80 per 100 lbs., f. o. b. cars on docks.
Average cost to install, $25 per ton.
Wage—Housesmiths, $8.00 per day.

Roofing—
Five-ply tar and gravel, $6.25 per square for 30 squares or over.
Less than 30 squares, $6.50 per square.
Tile, $35.00 to $50.00 per square.
Redwood Shingles, $12.00 per square in place.
Cedar Shingles, $12.00 per sq. in place.
Reinf'd Pabco, 7 yr. roof, $7.50 per sq.
Reinf'd Pabco, 10 yr. roof, $10.25 per sq.
Reinf'd Pabco, 20 yr. roof, $13.50 per sq.
Recoat, with Gravel, $3.00 per square.
Wage—Roofers, $8.00 per day.

Sheet Metal—
Windows—Metal, $2.00 a square foot.
Fire doors, (average), including hardware, $2.30 per sq. ft.

Skylights—
Copper,$1.25 a square foot (not glazed)
Galvanized iron, 35c a square foot (not glazed).
Wage—Sheet metal workers, $8.50 per day.

Stone—
Granite, average $7.50 sq. ft. in place.
Sandstone, average Blue, $4.75; Bosie, $2.80 sq. ft. in place.
Indiana Limestone, $3.00 per sq. ft. in place.
Wage—Stone cutters, $8.00 per day.
Stone setters, $8.50 per day.

Store Fronts—
Copper sash bars for store fronts, corner, center and around sides, will average 85c per lin. ft.
Note—Consult with agents.

Structural Steel—$115 per ton (erected).
This quotation is an average for comparatively small quantities.
Light truss work higher; plain beam and column work in large quantities, less.
Cost of steel for average building (erected), $110 per ton.

Steel Sash—
All makes, from S. F. stock, 26c to 34c per sq. ft.
All makes, plant shipment, 28c to 34c per sq. ft.
(Includes mullions and hardware.)

Tile—White glazed, 80c per foot.
White floor, 80c per foot.
Colored floor tile, $1.00 per foot.
Promenade tile, $1.00 per sq. ft. laid.
Wage—Tilesetters. $8.50 per day.

Maximum use for wall space

The above illustration from our new catalog shows an installation that is typical of

PEERLESS
Built-in Furniture

A **Peerless** Bathroom Cabinet Door, No. 17, is installed with a **Peerless** Linen Closet. Thus is the very maximum of service obtained from wall space. For here are combined a linen closet, a medicine cabinet, a drop shelf, a folding wall seat. It is shipped complete with hardware, ready to install.

Ask for a copy of "The Book of Built-in Furniture" which describes this and other Peerless devices.

Manufactured by BUILT-IN FIXTURE CO.,
2608 SAN PABLO AVE., BERKELEY, CALIF.

SOLD BY

THE HOOSIER STORE
Pacific Building
San Francisco

PEERLESS BUILT-IN FIXTURE CO.
Metropolitan Building
Los Angeles

CRESS & CO.
Portland

JOHN BREUNER CO.
Sacramento

1424 Franklin Street
Oakland

W. E. ZERWICK
Stockton

H. G. SHIRLEY
Fresno

SERVICE

TESTING
INSPECTION
CONSULTATION
PRODUCTION

Structural and Engineering Materials

ROBERT W. HUNT CO.
ENGINEERS

Chemical and Physical Testing Laboratories

New York Chicago Pittsburgh
St. Louis San Francisco Mexico City
London Montreal

PERMALIGHT

FLAT MILL WHITE

A Snow White Paint in Oil, giving equal opacity of cold water paints. Can be applied with spraying machines at a small increase of cost over water paints for use in factories, warehouses, loft buildings, laundries.

Hill, Hubbell & Co.
TECHNICAL PAINTS
SAN FRANCISCO
Los Angeles Portland Seattle New York

New Street Lighting Booklet

The Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has printed in booklet form a paper entitled Bright Streets are Busy Streets, presented by Mr. L. A. S. Wood of the Westinghouse Company at the twenty-eighth annual convention of the International Association of Municipal Electricians. Some of the interesting subjects discussed by Mr. Wood are City Zoning of Street Lighting, Street Lighting Defects and Their Remedy, the Economy of Good Street Lighting, and the Effect of Good Lighting on Property Values. Copies of this leaflet, which is known as Reprint 166, may be had upon application to the Westinghouse company, First National bank building, San Francisco.

A. A. E. Convention For San Francisco

At a meeting of the board of directors of the American Association of Engineers held at Chicago, the recommendation of the convention committee that San Francisco be selected as the place for holding the next annual convention was accepted. The date has not been set but it will be after June 10, 1924. Mr. C. E. Drayer was re-elected secretary, and Mr. H. W. Clausen was re-elected treasurer of the association. A resolution was adopted deprecating the removal of Mr. Arthur P. Davis from the position of director of the Reclamation Service and urging congress to investigate the removal of an engineer and appointment of a non-technical man to head the service.

McCray Refrigerator Co. Celebrates

The whole town of Kendallville, Indiana, home of the McCray Refrigerator Company, turned out October 19 and helped to celebrate the 33rd anniversary of the McCray Company. This concern now operates one of the largest refrigerator manufacturing plants in the world, and is known in every state in the union as well as in many foreign countries where McCray refrigerators are in use.

In connection with the company's anniversary a very attractive brochure has been published. It is entitled, "Thirty-Three Years of Progress," and contains photographic reproductions of officials of the company and pictures of every department of the Kendallville plant. The book also contains a list of employees who have been in the service of the company from six to 33 years. Some idea of the growth of the company may be had from the statement that in 1890, the total gross business was $35,000, while in 1923, the total value of gross business exceeded $3,500,000.

Main Banking Room—Bank of Italy, San Francisco
Bliss and Faville, Architects

CRITTALL

Steel Casements

Coast Representatives

J. E. Dwan
616 S. Utah St., Los Angeles
Waterhouse-Wilcox Co.
523 Market St., San Francisco
F. T. Crowe & Co.
508 Westlake Ave., N. Seattle
McCrakin-Ripley Co.
45 Fourth St., Portland

For years the builders of Crittall Casements and Windows have been leaders in their field. To deliver our products as promised is important. We therefore make no commitments which we are unable to fulfill. That is another reason why architects and builders have no hesitancy in specifying Crittall Steel Casements, Windows and Doors.

CRITTALL PATENTED UNIVERSAL

ALL CRITTALL CASEMENTS AND WINDOWS ARE MADE OF CRITTALLOY—THE COPPER-BEARING STEEL

CRITTALL CASEMENT WINDOW CO., *Manufacturers,* DETROIT

MATCHES IN BEAUTY AND FINISH THE FINEST FURNISHINGS

This beautiful square tube "California" Wall Bed in either walnut or mahogany finish hung on a "California" Secret Installation door is the latest in design and finish of wall bed construction. The "California" Secret Installation solves the problem of having too many doors and windows and at the same time conforms to the most modern ideas in wall decoration.

Write for Complete Data and Specifications

CALIFORNIA WALL BED COMPANY

714 Market Street, San Francisco

165 Thirteenth Street, Oakland 1040 S. Broadway, Los Angeles

The Ornamentation on the Vase and Plaque was SAND BLASTED *with*

FAN SHELL BEACH SAND

ONE OF THE WHITE SANDS SHIPPED BY

DEL MONTE PROPERTIES COMPANY

Phone Sutter 6130 401 CROCKER BUILDING San Francisco

Send Today for "Concrete Floors"

You know what makes a concrete floor a *good* concrete floor.

You write good specifications, and when the men on the job work after them, the finished result is worthy of your reputation.

The men who are immediately in charge of placing concrete need to realize fully the necessity for good materials as well as the importance of good workmanship.

Not only should they appreciate the importance of the selection of good aggregates; they should also give strict attention to the water content of the mix, and know how to apply the most advanced methods of curing.

This information is given simply, and in full detail, in our booklet, "Concrete Floors." It is a practical, how-to-do-it-on-the-job book, and you will find it worth many times the minute or two you spent in asking for it. Address our nearest District Office.

And remember that the Portland Cement Industry, acting through the Portland Cement Association, offers "a service with every sack." This service, which costs you nothing, can save you money. Take full advantage of it.

PORTLAND CEMENT ASSOCIATION

A National Organization to Improve and Extend the Uses of Concrete

Atlanta	Denver	Kansas City	New York	San Francisco
Birmingham	Des Moines	Los Angeles	Parkersburg	Seattle
Boston	Detroit	Memphis	Philadelphia	St. Louis
Chicago	Helena	Milwaukee	Pittsburgh	Vancouver, B.C.
Dallas	Indianapolis	Minneapolis	Portland, Oreg.	Washington, D.C.
	Jacksonville	New Orleans	Salt Lake City	

Helpful Reference Data for Your Files

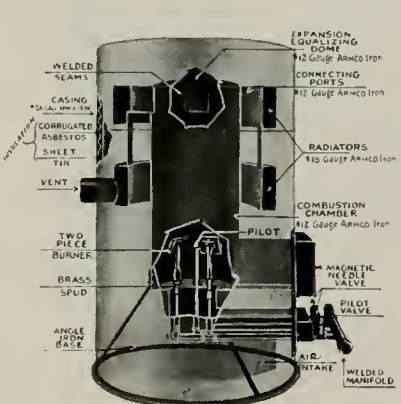
This unusual detail folio covers practically every elevator door installation problem. It makes complete facts instantly available in technical form for plans, specifications and detail drawings. Many architects now save time and labor by making blue prints direct from these drawings. Write Department "EE" for a complimentary copy and particulars of

"IDEAL"
Elevator Door Hardware

Richards-Wilcox Mfg. Co.
A Hanger for any Door that Slides
AURORA, ILLINOIS, U.S.A.
Minneapolis Chicago New York Cleveland Los Angeles
Philadelphia Boston St. Louis Indianapolis San Francisco
RICHARDS-WILCOX CANADIAN CO. LTD.
Winnipeg LONDON, ONT Montreal

San Francisco Office: 525 Market Street

The Electrically Controlled--Gas Fired
McLAUGHLIN FURNACE



burns gas within a Welded Armco Iron Combustion Chamber.

The "Double Radiator" extracts 88% of B. T. U. input, reducing flue gas temperatures from 400 deg. to 300 deg. F. (Smith, Emery & Co. test).

Each of the **Three Separate Burners** is controlled by Magnetic Valves and always consume a constant quantity of gas.

Write for Information

McLAUGHLIN METAL WORKS
223 J Street, Sacramento, Calif.

San Francisco	**Stockton**	**Fresno**	**Chico**
W. P. Goss	**Willard Hardware Co.**	**Evans Heating Co.**	**Hall Metal Works**

A Combination Fixture
for Up-to-date Users

THE "Bryn Mawr" Lavatory Fitting is a popular mixer enabling the user to wash in running water tempered to personal likes.

It fits any staple vitreous china lavatory with or without back provided with the proper hole back of the over-flow.

It is in much demand for porcelain enameled lavatories having the 1⅛-inch chainstay hole.

The design is attractive, particularly the nozzle, handles, flanges and knob. All working parts and connections have been designed to insure quickness and ease in installation and to give durable, satisfactory service.

For convenience in rewashering, the thread barrel and stem are removable from the top; the seat can be removed from below.

A plentiful stream is delivered thru the single nozzle.

HAINES, JONES & CADBURY COMPANY · HAJOCA · TRADE MARK · PHILADELPHIA

HAINES, JONES & CADBURY CO.

MAKERS OF PLUMBING SUPPLIES

857-859 FOLSOM STREET, SAN FRANCISCO

PHILADELPHIA-NEW YORK-RICHMOND, VA.-SAVANNAH

JACKSONVILLE-CHARLOTTE

Specify

"Merced" Roofing Tile

BURNED clay roofing tile is now being used for almost every type of architecture, educational and business institutions, churches, homes, industrial plants.
Besides being fireproof, a properly laid tile roof is free from leaks and will not call for repairs.

CALIFORNIA POTTERY CO.

579-583 MILLS BLDG.
SAN FRANCISCO, CALIF.
Merced Oakland Fresno

We also manufacture the following products:

Sewer Pipe and Fittings — Chimney Pipe and Fittings — Flue Lining — Hollow Building Tile — Partition Tile — Drain Tile

for beauty-

Tropico Tiles

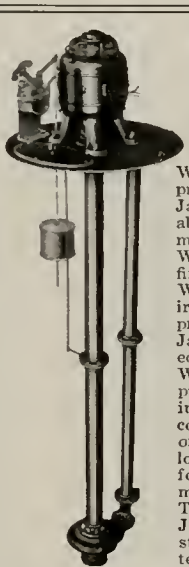
TROPICO QUARRY TILES in red and buff shades are a distinctive and durable floor material.

TROPICO FAIENCE TILES in a variety of dull glazes and textures are the ideal materials for mantels, sun-rooms, bathrooms, and all interior and exterior decorative treatment where tiles of permanent, soft coloring are desired.

Sold by all tile dealers.

Look for the name TROPICO on your tiles.

TROPICO POTTERIES *Inc.*
GLENDALE — CALIFORNIA



Pump Questions You Have Asked and the Answer

Why has the volume of production of Byron Jackson Pumps kept abreast of the development of irrigation in the West during the past fifty years?
Why have the largest irrigation and industrial projects selected Byron Jackson units as standard equipment?
Why have Byron Jackson pumps found their way into foreign fields, overcoming the disadvantages of freights, tariffs and lower production costs of foreign and inferior makes?
The answer is that Byron Jackson pumps have stood the three great tests of time—efficiency, durability and service.

Byron Jackson Pump Mfg. Co., Inc.

Wherever water is to be lifted

Sharon Building, San Francisco
Salt Lake City, Los Angeles, Visalia, Portland, Ore.

RETARDO

protects against fire

It insures your client of reasonable protection against fire, both interior and exterior.

RETARDO preserves the surface, beautifies, and is manufactured in all colors and for all purposes.

RETARDO costs no more than ordinary paint, but does more work.

Send for color chart and further information

Fire Retardent Products Co.
2838 Hannah Street Oakland, Calif.

FIRE PREVENTATIVE PAINT

ES
PRODUCTS

ES ELEVATOR DOOR EQUIPMENT

ES PNEUMATIC DOOR OPERATORS
Open and close elevator doors quicker and quieter than by hand.

ES ELEVATOR DOOR CLOSERS
Close the doors by spring pressure. Prevent slamming and ensure doors being locked.

ES ROLLER BEARING HANGERS
Are more durable, quiet and nearly frictionless than ball bearing hangers.

ES POSITIVE ELECTRIC INTERLOCKS
Prevent the starting of the elevator until all the doors are closed and locked.

See Sweet's Architectural Catalog and exhibit at Architects' Samples Corporation (N. Y. C.)

ELEVATOR SUPPLIES COMPANY, INC.
Main Office and Works: HOBOKEN, NEW JERSEY

Branch Offices
CLEVELAND, 1039 Walnut Avenue
CHICAGO, 111 S. Jefferson Street
SAN FRANCISCO, 186 Fifth Street
LOS ANGELES, 1120 S. Hope St.
PHILADELPHIA, 1714 Ludlow Street
ST. LOUIS, Railway Exchange Bldg.

Walls finished with Cabot's Old Virginia White
Roof finished with No. 346 Dark Gray Creosote Stain
WALTER BOSCHEN, Architect, St. Joseph, Mo.

The Latest Country House Color-schemes

An especially appropriate and harmonious exterior color-treatment has been developed for the dignified and beautiful type of country-house.

Cabot's Old Virginia White, for the walls

Cabot's Creosote Stains in greens or dark gray, for the roofs

The soft, brilliant "whitewash white" of the Old Virginia White is particularly suitable for this type of house, and the rich greens and velvety dark gray stains harmonize perfectly for the roof, with the old New England dark green blinds.

SAMUEL CABOT, Inc., Mfg. Chemists, Boston, Mass.

Cabot's Creosote Stains, Waterproof Cement, and Brick Stain
"Quilt" Conserve Wood Preservative, Damp-Proofing
Protective Paints, Waterproofing, etc.

Pacific Materials Co., San Francisco
Waterhouse-Wilcox Pacific Co., Los Angeles
Theo. F. Snyder, San Diego, Cal.
S. W. R. Dally, Seattle
Cress & Co., Portland
H. G. Lanohan & Co., Spokane, Wash.

MARBLE

Finished and Installed

EXTERIOR

INTERIOR

GOOD FOR ALL TIME · VERMONT MARBLE

VERMONT MARBLE COMPANY

244 Brannan St., San Francisco
Phone Kearny 3470

East End 11th St. Bridge, Tacoma

Cast Iron Stairs and Store Fronts

Bank and Office Railings, Elevator Enclosures and Fire Escapes

C. J. HILLARD & CO., Inc.

Nineteenth and Minnesota Streets

Telephone Mission 1763

SAN FRANCISCO, CALIF.

DEPENDABILITY

"Since 1858"

LINOLEUMS

WINDOW SHADES

Carpets
Draperies
Rugs

Estimates furnished

D. N. & E.

Walter & Co.

562-572 Mission Street
SAN FRANCISCO

Los Angeles Portland Seattle

Sacramento County Court House, Sacramento, Cal.

Specify

COLUMBIA MARBLE

Samples and complete information relative to the use of Columbia Marble sent upon request.

COLUMBIA MARBLE CO.

413 Rialto Building, San Francisco
Telephone Sutter 1244

BOWSER

Experience with Pacific Coast conditions, coupled with diversified experience on every sort and size of installation, whether for handling gasoline and oil or effecting economic lubrication—

Experience that will help you better serve the owner—

Experience that can be had only upon application to this house, which opened its first Pacific Coast branches in 1908.

Tell us your problem, and we will go to work —without obligation, of course.

TANKS **DEPENDABLE** PUMPS

BOWSER ESTABLISHED 1885

Sales and Service Offices and Representatives Everywhere
612 Howard St., San Francisco

Pump and Tank Headquarters
Fort Wayne, Indiana
722-3 New Bank of Italy Building, Los Angeles

GLASS

Fuller & Goepp

Manufacturers of

Art and Leaded Glass
MIRRORS

Dealers in *Sani-Onyx* White Glass for Modern Home and Office Fixtures

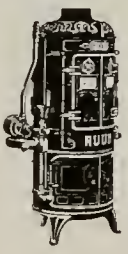
32 Page Street, San Francisco
Market 498

Jackson at 11th, Oakland
Lakeside 7272

OUR OAKLAND PLANT

When writing to Advertisers please mention this magazine.

Buy This BETTER Water Heater



Better because it gives Perfect Hot Water Service—instantaneous, inexhaustible and inexpensive—not just once in a while, but all the time—
Better because it is simply made—
Better because it is solidly and ruggedly built—
Better because it is made by men whose experience dates back to 1889, when the world's first successful automatic water heater—a RUUD—was built.
Every RUUD is equipped with an internal automatic thermostat, double fuel control, condensation sheds.

RUUD HEATER CO.
431 Sutter St. San Francisco
Phone Sutter 1640

Alvaline, Cementoline
and other
Jones-Duncan Products

MAGNER BROTHERS
PAINT MAKERS

Telephone: Market 113

414-424 Ninth St. San Francisco

HEATING-PLUMBING

COMPLETE PLUMBING AND HEATING SYSTEMS INSTALLED IN ALL CLASSES OF BUILDINGS — ALSO POWER PLANTS

GILLEY-SCHMID CO., Inc.
198 OTIS ST., SAN FRANCISCO
Tel. MARKET 965

THE TORMEY CO.

General Painters

Phone Franklin
5 - 5 - 9 - 8

1042 Larkin St., San Francisco, Cal.

Phone Sutter 1414

Hunter & Hudson
ENGINEERS

Designers of Heating, Ventilating and Wiring Systems, Mechanical and Electrical Equipment of Buildings

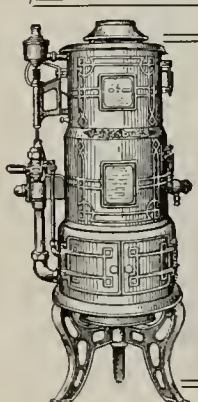
703 Rialto Bldg., San Francisco, Cal.

ELEVATOR ACCESSORIES

We manufacture and install pneumatic elevator door controls and interlocks. (A safety first equipment which has been making good for over ten years.) For information concerning elevator safety and economy we cordially invite you to call

RANDALL CONTROL AND HYDROMETRIC CORPORATION

523 Central Bldg. Los Angeles, Cal. Phone 11901
265A Minna St. San Francisco, Cal. Phone Douglas 2397



Pittsburg

It Insures
Instant
Hot Water
Service

PITTSBURG WATER HEATER COMPANY
478 Sutter S., San Francisco
Phone Sutter 5025

RUSSWIN
BUILDERS' HARDWARE

JOOST BROS., Inc.
SAN FRANCISCO AGENTS

We Carry Complete Stock:
Fishing Tackle—Guns—Mechanics' Tools—Paints—Crockery and Glassware—Stoves—Household Goods. Telephone Market 891.

NO BRANCH STORE
Mazda Lamps Electric Goods

PACIFIC MANUFACTURING COMPANY
MILL WORK, SASH AND DOORS
HARDWOOD INTERIOR TRIM A SPECIALTY
MAIN OFFICE: SANTA CLARA, CALIFORNIA
SAN FRANCISCO, 177 Stevenson Street — LOS ANGELES, 908 Washington Building
OAKLAND, 1001 Franklin Street — SAN JOSE, 16 North First Street

LARSEN-SIEGRIST CO., Inc.
BUILDING CONSTRUCTION
807 Claus Spreckels Building — SAN FRANCISCO

HEATING VENTILATION — PLUMBING SHEET METAL WORK
FLOOR AND WALL TILING
SCOTT CO., INC.
243 MINNA STREET — SAN FRANCISCO

VAN EMON ELEVATOR COMPANY
PASSENGER ELEVATORS FREIGHT
1159-65 Howard Street — Market 808 — San Francisco, Calif.

Electric Wiring
Fixtures and Lighting Systems Installed
Motors Installed
A. F. WELLS CO.
Electrical and Mechanical Engineers — Contractors
155 Second St.
San Francisco, Cal.
Douglas 1820
Telephone, Buzzer, and Intercommunicating Systems
Electric Appliances
Estimates Furnished

Res. Tel. Merritt 3600
HERBERT BECKWITH
Building Construction
Formerly with ARTHUR ARLETT — Everson Building OAKLAND

JOHN M. BARTLETT
GENERAL CONTRACTOR
Office 357 - 12th ST. OAKLAND — Phone Lakeside 6750 — Res. Phone Berkeley 6884W

For Information on Public Seating *Consult*
WESTERN STATES SEATING COMPANY
39 Second Street, San Francisco — 2133 Kern Street, Fresno, Calif. — 1040 So. Broadway, Los Angeles, Calif.

When writing to Advertisers please mention this magazine.

SCHOOL AND THEATRE EQUIPMENT
FLAGG STUDIOS SAN FRANCISCO LOS ANGELES
DESIGNERS AND MANUFACTURERS
Drop Curtains, Automatic Hoists
Stage Hardware, Scenery
"Hitch Your Desires to Our Experience"

Phone Franklin 548
I. R. KISSEL
Decorator, Painter and Paperhanger
1747 SACRAMENTO ST., Bet. Polk St. and Van Ness Ave., SAN FRANCISCO

ROBERT TROST PHONE MISSION 2209
General Building Contractor
We Specialize in High Grade Work and Employ Skilled Labor in every Branch of the Building Industry.
26th and Howard Streets
SAN FRANCISCO

Phone Sutter 1533
ALFRED H. VOGT
GENERAL CONTRACTOR CONCRETE CONSTRUCTION
185 Stevenson Street, San Francisco

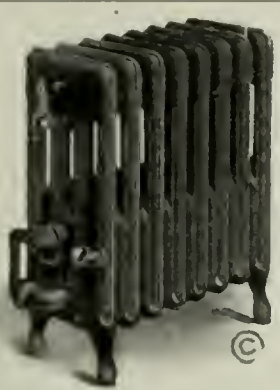
LAWTON & VEZEY
CONTRACTORS AND BUILDERS
EVERSON BUILDING OAKLAND, CALIFORNIA

MONSON BROS.
Building Construction
Yard
Mariposa and Bryant Streets
Phone Market 2963
251 Kearny Street, San Francisco
Telephone Douglas 6619

PETERS CONSTRUCTION CO.
GENERAL CONTRACTORS
705 Atlas Building
604 MISSION ST., SAN FRANCISCO
Phone Douglas 9063
Builders' Exchange
351-12th ST., OAKLAND
Phone Lakeside 6750

HANNAH BROS.
CONTRACTORS AND BUILDERS
142 Sansome Street, San Francisco
Members Builders Exchange Phone Douglas 1577

When writing to Advertisers please mention this magazine.



"Williams Service"

Complete Steam Heating Installation

Employing Clow Gasteam Radiators
in Apartments, Schools, Churches, Residences, Commercial Buildings
Perfect Heat — Automatic Control
No Odor — Normal Humidity

Williams Radiator Company
571 MISSION STREET
Telephone Douglas 8230 SAN FRANCISCO

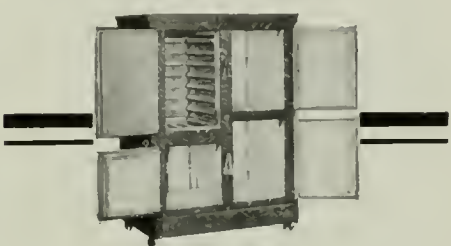
McCRAY
REFRIGERATORS *for* ALL PURPOSES

Wherever there is need for refrigeration service, in the small or large residence, hotel, hospital or institution, there is a McCray to meet that need. More than 30 years' devotion to the problems of refrigeration has made the McCray standard equipment.

Write today for the New McCray catalogs.

No. 95—for Residences
No. 72—for Grocers
No. 64—for Markets
No. 75—for Florists
No. 53—for Hotels and Institutions

McCRAY REFRIGERATOR CO.
2363 LAKE STREET
KENDALLVILLE, IND.
San Francisco Office, 765 Mission Street



For residences

Specify

TRADE MINWAX MARK

Brick and Cement Coating for Exterior Brick and Plastered Walls

A permanent coating that is absolutely waterproof and positively will not flake, peel or craze.

Waterproof your buildings while they are dry

Send for Booklet on Products, Data and Specifications

MINWAX CO., INC.

K. M. HAYDEN
22 Battery St.
San Francisco

W. C. LEA
653 So. Clarence St.
Los Angeles

VLAARITE ENAMEL

The highest quality white finish it is possible to produce.

VLAARITE Enamel produces an ideal enamel finish that will be a credit to the finest residence or public building interiors.

Specify

Vlaarite

Oakley Paint Mfg Co.

Paints, Varnishes, Enamels

727 Antonio Street, Los Angeles
833 Hearst Bldg., San Francisco

I. M. SOMMER & CO.
ENGINEERS AND GENERAL CONTRACTORS
CONCRETE CONSTRUCTION
Phone Hemlock 1100
901 BRYANT ST., SAN FRANCISCO

K. E. PARKER COMPANY, Inc.
GENERAL CONTRACTORS
Phone Sutter 5661
Room 515 Clunie Building, SAN FRANCISCO

R. W. LITTLEFIELD
Building Construction
357 12th Street, Room 9, Oakland, Cal.
Phone Lakeside 6750

H. H. HILP, Jr.
J. FRANK BARRETT
BARRETT & HILP
CONCRETE CONSTRUCTION BUILDERS GENERAL CONTRACTORS
918 HARRISON STREET, near 5th, SAN FRANCISCO
Telephone DOUGLAS 700

CAEN STONE
A refined, elegant, interior finish.
A. KNOWLES
CONTRACTOR AND PLASTERER
442 Call-Post Building
San Francisco

STEELFORMS Signify ECONOMY, RAPIDITY, and EFFICIENCY
STEELFORM CONTRACTING COMPANY
STEELFORMS FOR CONCRETE BUILDINGS
C. B. Hopkins, C. E., Manager
681 Market Street, San Francisco
CONCRETE JOIST FLOOR CONSTRUCTION

Phone Piedmont 2079W
DAVID NORDSTROM
GENERAL CONTRACTOR
4146 Emerald Street, Oakland

M. E. VUKICEVICH
SPENCER B. BAGGE
VUKICEVICH & BAGGE
GENERAL CONTRACTORS
Phone Sutter 5691
815 Bryant Street, San Francisco

When writing to Advertisers please mention this magazine.

432 Bryant St.
SAN FRANCISCO
Douglas 2676

Standard Fence Co.
WIRE AND IRON WORKS

60th and Lowell Sts.
OAKLAND
Tel. Piedmont 646

DESIGNERS—BUILDERS
HOME AND ESTATE FENCE
AVIARY and TENNIS COURT FENCE
WIRE GRILL WORK—WIRE SCREEN
FLEXIBLE WIRE CONVEYOR BELT
WIRE SPECIALTIES
1922 Santa Fe Avenue, Los Angeles, Cal. Phone 67188

Steel Bars
FOR CONCRETE REINFORCEMENT
Cut to Length, Fabricated, Installed
Tel. Douglas 3466
BADT-FALK & CO.
346 Call-Post Bldg., 74 New Montgomery St., San Francisco

SPENCER ELEVATOR COMPANY SAN FRANCISCO CAL. W WESTINGHOUSE EQUIPMENT

Passenger and Freight Elevators
For Every Service
SPENCER ELEVATOR COMPANY
166-180 Seventh Street San Francisco

PACIFIC DEPARTMENT
GLOBE INDEMNITY COMPANY
Bonds and Casualty Insurance for Contractors
FRANK M. HALL, formerly Robertson & Hall, Mgr.
444 California Street Phone Sutter 2280 SAN FRANCISCO

CARL H. PETERSON
BUILDER
PHONE DOUGLAS 1876 185 STEVENSON STREET SAN FRANCISCO

PHONE DOUGLAS 2370
R. McLERAN & CO.
GENERAL CONTRACTORS
HEARST BUILDING SAN FRANCISCO, CAL.

D. ZELINSKY & SONS
PAINTERS AND DECORATORS
165 GROVE STREET SAN FRANCISCO

FLOWERING EUCALYPTUS
The Flaming Gum Tree of Australia (Eucalyptus Fecifolio)
A mass of flame-colored bloom through the summer months
LIMITED SUPPLY OF SMALL TREES FOR SALE FOR FALL AND SPRING PLANTING
A. K. Wallis
Telephone Berkeley 671-N 2628 Shattuck Ave. Berkeley, Calif.

When writing to Advertisers please mention this magazine.

TEMPERATURE REGULATION
JOHNSON SERVICE COMPANY
Manufacturers and Installers of JOHNSON Heat Humidity CONTROL
For schools, residences, hospitals, banks, public buildings, also canneries and all kinds of industrial plants—Hot water tank regulators, air and water reducing valves.
Rialto Bldg., SAN FRANCISCO; 605 Van Nuys Bldg., LOS ANGELES

Atlas Heating and Ventilating Co., Inc.
ENGINEERS AND CONTRACTORS
STEAM AND HOT WATER HEATING—PIPE AND PIPELESS FURNACES
SHEET METAL WORK PATENT CHIMNEYS
Everything in Heating
Phone Douglas 378 557-567 Fourth Street San Francisco

CLARENCE DRUCKER HERMAN LAWSON
LAWSON & DRUCKER
PLUMBING—HEATING—CONTRACTORS
450 HAYES STREET
TELEPHONE MARKET 275 SAN FRANCISCO, CAL.

H. G. NEWMAN CO.
PLUMBING HEATING
OAKLAND 3329 2004 TELEGRAPH AVENUE OAKLAND

ALEX COLEMAN
CONTRACTING PLUMBER
706 ELLIS STREET, SAN FRANCISCO Phone FRANKLIN 1006

WM. F. WILSON COMPANY
MODERN SANITARY APPLIANCES
Special Systems of Plumbing for Residences, Hotels, Schools, Colleges, Office Buildings, Etc.
Phone Sutter 357 328-330 Mason Street, San Francisco

W. H. PICARD
Plumbing, Heating, Ventilating and Power Plants
5656 College Avenue
5662 Keith Avenue
Piedmont 7522 Oakland, Calif.

JOHN A. PETERSON, President B. HEINRICH, Vice-President
SAN FRANCISCO ELEVATOR CO., Inc.
ELEVATORS
Automatic, Electric, Hydraulic, Belt Power, Automatic Dumbwaiters and Handpower Machines, Push Button Passenger Elevators a Specialty
Telephone Kearny 2443 860 FOLSOM STREET, SAN FRANCISCO

When writing to Advertisers please mention this magazine.

Yards:
Tracy - Brentwood
Patterson - Newman
California

Phones:
Kearny 2073 - 2074

SANTA FE LUMBER CO.

A. J. RUSSELL, Mgr.

Wholesale and Retail

POLES AND PILING
OIL RIG AND SHIP TIMBERS
SAGINAW SPECIAL SHINGLES

LUMBER

FENCE POSTS
SIMPLEX SILOS
PAPEC ENSILAGE CUTTERS

16 California Street San Francisco, Calif.

from tree to consumer

Pine and Redwood Lumber

SASH DOORS AND MILL WORK

SUNSET LUMBER COMPANY

MANUFACTURERS — WHOLESALE AND RETAIL

Main Office and Yards:

FIRST AND OAK STREETS, OAKLAND Phone Oakland 1820

POPE & TALBOT

Manufacturers, Exporters and Dealers in

Lumber, Timber, Piles, Spars, Etc.

Office, Yards and Planing Mills
859-869 THIRD STREET, SAN FRANCISCO, CAL.

Mills: Port Gamble, Port Ludlow and Utsalady, Washington

Furnaces

AGENTS FOR
FRONT RANK All Steel Warm Air Furnaces
AND THE OLD RELIABLE
THATCHER Cast Iron Warm Air Furnaces

REGISTERS — FURNACE FITTINGS — REPAIRS

Montague Range and Furnace Company

327-329 JESSIE STREET Phone Garfield 1422 826-830 MISSION STREET

SAN FRANCISCO, CALIF.

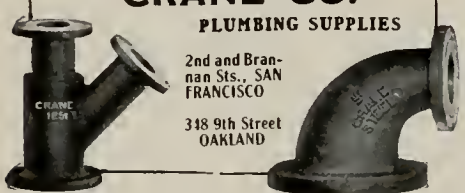
When writing to Advertisers please mention this magazine.

CRANE
CAST IRON
BRASS
CAST STEEL
FERROSTEEL

FLANGED FITTINGS

We have the largest line of patterns for flanged fittings for low pressure, standard, extra heavy, hydraulic, superheated and extreme hydraulic pressures, ranging in size from one-inch to sixty-inch, and for working pressures from fifty pounds to three thousand pounds.
The dimensions of the low-pressure, standard and extra heavy fittings are in accordance with the 1915 American Standard.
Castings for special fittings also may be made at a minimum expense owing to our large equipment of special patterns which may be altered at very low cost.

CRANE CO.
PLUMBING SUPPLIES



2nd and Brannan Sts., SAN FRANCISCO

318 9th Street OAKLAND

Genuine Hyloplate Blackboards
Best Pennsylvania Slate Blackboards
School Furniture
Western Venetian Blinds
Lockers

C. F. WEBER & CO.
San Francisco Reno
Los Angeles Phoenix

ACORN
HARDWOOD FLOORS

Guarantee complete floor satisfaction by specifying

"Acorn Brand" Oak Flooring

Architects and contractors are proving this by actual practice.

Strable Hardwood Co.
HARDWOOD LUMBER
511-545 First St., Oakland, Calif.
Phone Oakland 245

Formal Garden Effects may be obtained on your Country Estate within a period of two to three years.

MacRORIE-McLAREN CO.
LANDSCAPE ENGINEERS
and General Nurserymen
Suite 301 Phelan Bldg., San Francisco
Nurseries at Beresford

CORROSIRON

the acid-proof drain pipe

Make your acid drain lines permanent -:- -:-

Corrosiron drain pipe and fittings manufactured and carried in stock in San Francisco

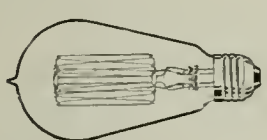
PACIFIC FOUNDRY COMPANY

Harrison and Eighteenth Streets

SAN FRANCISCO

ROBERTS MFG. CO.

Lighting Fixtures
Electric Appliances
Incandescent Lamps



WILLYS FARM LIGHTING AND POWER PLANTS

663 Mission Street San Francisco

AMERICAN SURETY BLDG., New York
Herman Lee Meader, Architect

For the Entrance Corridors of Office Buildings Use

FRINK REFLECTORS

The corridors of the more important office buildings can generally be successfully lighted by concealed specially designed cove reflectors. May we emphasize the advisability of getting in touch with our Engineering Department before the details are too far developed?

Some prominent New York installations are:

Equitable Building
Heckscher Building
Woolworth Building
Singer Building
American Surety Building

"Specify Frink Reflectors"

I. P. FRINK, Inc.

SAN FRANCISCO, CAL.,
77 O'Farrell Street
24th Street and 10th Avenue,
New York

Chicago, Ill.
Monadnock Bldg.
Boston, Mass.
161 Summer St.
Detroit, Mich.
325 State St.
Cleveland, Ohio
992 The Arcade
Buffalo, N. Y.
310 Mutual Life Bldg.
St. Louis, Mo.
1415 Pine Street
Seattle, Wash.
609 Seaboard Bldg.
Philadelphia, Pa.
Franklin Trust Bldg.
Cincinnati, Ohio
601 Second Nat'l. Bank Bldg.
Louisville, Ky.
415 West Main St.
Birmingham, Ala.
426 Jefferson Co. Bank Bldg.
Atlanta, Ga.
1526 Candler Bldg.

Canada
Associated with Robert Mitchell Co. Ltd.
64 Belair Avenue, Montreal

S. & S. TILE CO.

MANUFACTURERS OF
HAND-MADE TILES FOR WALLS AND FLOORS. REPRODUCTIONS OF OLD SPANISH AND MOORISH GLAZED TILES
Factory, 4th and Carrie Sts. San Jose, Cal.

Steam Heating and Power Plant Equipment

JAMES I. KRUEGER

Telephone Sutter 7057

Representative
ILLINOIS ENGINEERING COMPANY
SKIDMORE VACUUM AND BOILER FEED PUMP
EUREKA BRASS WORKS
417 Market St. Suite 320 San Francisco, Calif.

CHARLES T. PHILLIPS COMPANY

CONSULTING ENGINEERS
HEATING, VENTILATING, ELECTRIC WIRING, PLUMBING
Roberts Building, Los Angeles

CYCLOPS IRON WORKS

ICE MAKING and REFRIGERATING MACHINERY, TRAVELING CRANES
Office and Works: 837-847 FOLSOM ST. SAN FRANCISCO, CAL. Telephone: SUTTER 3030

GRINNELL AUTOMATIC SPRINKLER

GRINNELL COMPANY
OF THE PACIFIC
ENGINEERS AND CONTRACTORS
453 Mission Street, San Francisco
VALVES PIPE and FITTINGS
CHEMICAL FIRE EXTINGUISHERS and FIRE ENGINES

Fire Protection Engineering Company

ENGINEERS AND CONTRACTORS
Executive Offices and Factory
67 MAIN STREET
San Francisco, California
Automatic Sprinkler Systems
Automatic Fire Alarm Systems
Watchman Detector Systems
Chemical Engines
Hand Fire Extinguishers
Motor Driven Fire Apparatus

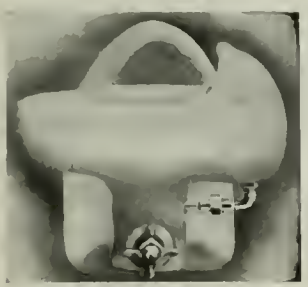
CLINTON CONSTRUCTION COMPANY

of California
BUILDERS AND MANAGERS OF CONSTRUCTION
923 Folsom Street San Francisco

RADIATOR AIR VALVES

Traps, Rapid Riser Vents, Vacuum and Condensation Pumps
They Are Absolutely Guaranteed
JAS. P. MARSH & CO., Represented by HULTING, HURST & HULTING
Monadnock Building (Telephone Sutter 5295), San Francisco, Cal.

When writing to Advertisers please mention this magazine.



Model No. 7A

An Economical Drinking Fountain
— for —
Schools and Theatres

Architects write for latest Catalog

Haws Sanitary Drinking Faucet Co.
1808 Harmon Street, Berkeley,

George S. MacGruer
Robert M. Simpson
} Members of Builders Exchange

MacGruer & Simpson

CONTRACTING PLASTERERS
PLAIN AND ORNAMENTAL

Cement, Stucco and Artificial Stone

Phone Garfield 512 — 266 Tehama Street, San Francisco

Blackboards

First Grade Natural Slate
Green or Black Composition Board
School Furniture and Supplies

Estimates Given for Complete Installations

STEWART SALES CO.
247 Rialto Building, San Francisco, Cal.

Carey

BUILT-UP ROOFING

Pipe and Boiler Coverings
Asbestos Roofing
Elastite Expansion Joints
Carey Fibre Roof Coating
Asfaltslate Shingles
JONES BROTHERS ASBESTOS SUPPLY COMPANY, INC.
512 Second Street, San Francisco
Telephone, Garfield 156

DAVID E. KENNEDY

Incorporated — Established 1899

CORK TILE FLOORS
EVERLASTIC TILE FLOORS
RUBBER-MARBLE FLOORS
INTERLOCKING RUBBER TILE
KENCOR BULLETIN BOARDS

San Francisco
Sharon Bldg.

Los Angeles
Story Bldg.

STANLEY
GARAGE
HARDWARE

When writing to Advertisers please mention this magazine.

CALIFORNIA ARTISTIC METAL & WIRE CO.
J. T. McCORMICK, PRESIDENT
ORNAMENTAL IRON AND BRONZE
349-365 SEVENTH ST. SAN FRANCISCO

MORTENSON CONSTRUCTION CO.
CONTRACTORS FOR STRUCTURAL STEEL AND IRON
H. MORTENSON, President
Office and Shops: Corner 19th and Indiana Streets
Phone: Mission 5033 SAN FRANCISCO, CAL.

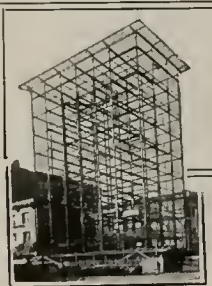
JUDSON MANUFACTURING COMPANY
Main Office:
817-821 FOLSOM STREET
Telephone Sutter 6820
SAN FRANCISCO
Structural Steel and Iron Work
Works:
OAKLAND—EMERYVILLE
CALIFORNIA
Telephone Piedmont 229

Federal Ornamental Iron & Bronze Co.
Bank Counter Screens and Grille Work Our Specialty
Most Modern Equipment Throughout
Recent Contracts: BANK OF ITALY, FIRST NATIONAL BANK
16th Street and San Bruno Avenue, San Francisco Phone Market 1011

HERRICK IRON WORKS
STRUCTURAL STEEL
Office and Works, 18th and Campbell Streets
Oakland, Cal. Phone Lakeside 1460

Telephone Mission 58 A. A. DEVOTO, President
CENTRAL IRON WORKS, Inc.
STRUCTURAL STEEL
Office 2050 BRYANT STREET SAN FRANCISCO, CAL.

C. F. HOFFMAN L. W. FLIEGNER
Golden Gate Iron Works
STRUCTURAL STEEL AND ORNAMENTAL IRON CONTRACTORS
Howard and 11th Streets San Francisco



SCHRADER IRON WORKS, Inc.
STRUCTURAL STEEL CONTRACTORS
Fire Escapes, Waterproof Trap Doors, Ornamental Iron Work
1247-1249 HARRISON STREET SAN FRANCISCO, CAL.
Bet. 8th and 9th Telephone Market 337

When writing to Advertisers please mention this magazine.

This beautiful SNOW WHITE, SANITARY SINK will not only contribute to the appearance of the Home or Apartment House, but it will make the property more rentable or salable. Architects make no mistake when they specify Petrium Snow White Sinks.

PETRIUM SANITARY SINK CO., *Fifth and Page Streets, Berkeley*
On display: Hoosier Store, Pacific Building, San Francisco
Sterling Furniture Co., 1049 Market St., San Francisco
Building Material Exhibit, 77 O'Farrell St., San Francisco
Oakland—Building Material & Manufacturing Exhibit, 1424 Franklin Street.

JOHN TRAYNOR CHARLES HARCOURT

OCEAN SHORE IRON WORKS

Manufacturers of
BOILERS, STEEL TANKS, STEEL PLATE SPECIALTIES

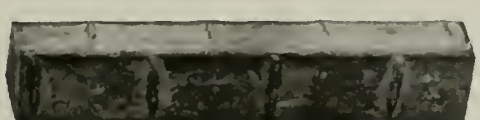
Dealers in
BOILERS, TANKS, PUMPS, ENGINES
GENERAL MACHINERY, ETC.

Office and Works:
550-558 EIGHTH STREET

Phones Market 462 and 463
SAN FRANCISCO, CAL.

OPEN HEARTH

REINFORCING STEEL BARS



Square Deformed—Immediate Shipment—Cut to required lengths

PACIFIC COAST STEEL COMPANY

Sales Office, Rialto Building SAN FRANCISCO Phone Sutter 1564

BUTTE ELECTRIC AND MFG. CO.
PAUL BUTTE, Owner
HIGH GRADE ELECTRICAL INSTALLATIONS
FEDERAL ELECTRIC BANK PROTECTION SYSTEMS
DOUGLAS 145 Moved to 956 Folsom Street San Francisco

H. S. TITTLE
CONTRACTING ELECTRICAL ENGINEER
85 COLUMBIA SQUARE, SAN FRANCISCO Phone HEMLOCK 2865

To Be "Low Bidder" Not Always Our Aim
"QUALITY AND SERVICE ALWAYS"
Our nation-wide organization and large experience in this field assure you always of fair estimates and absolute satisfaction. Electrical Appliances
F. E. NEWBERY ELECTRIC CO.
Alta Building, 381 Bush Street, San Francisco Phone Sutter 6361

San Francisco, Cal. Oakland, Cal. Los Angeles, Cal.
NE PAGE, McKENNY CO.
Electrical Engineers and Contractors
Phone Sutter 2369 589 Howard St., San Francisco, Cal.

BERKELEY ELECTRCIAL COMPANY
ELECTRICAL CONTRACTORS—FIXTURES
2142 Center St. PHONE BERKELEY 8747 Berkeley, Calif.

AUTOMATIC ELECTRIC CO.
PAX—Private Automatic Telephone Exchanges. We are now installing a complete system in the new Federal Reserve Bank, San Francisco. Ask for our engineer to call.
DIRECT LINE TELEPHONE CO., *Agents*
37 CALIFORNIAST. Telephone Douglas 722 SAN FRANCISCO

Office Phone Piedmont 391
KING'S ELECTRICAL CO.
ELECTRIC WIRING
BUILDERS' EXCHANGE OAKLAND, CALIF.

Browne-Langlais Electrical Construction Co.
Agents for
ROBBINS and MYERS MOTORS, PACKARD MAZDA LAMPS
313 FIFTH STREET, SAN FRANCISCO
Telephone Douglas 976

1828—MOTT—1923

Architects and their clients are invited to visit our show rooms, 553-555 Mission St. San Francisco, D. H. Gulick, manager.

MOTT COMPANY
of California

DOUGLAS 2046 FELIX BUTTE

BUTTE ELEC. EQUIPMENT CO.

Trade Mark BEECO Registered

ELECTRICAL CONTRACTORS

530 FOLSOM STREET SAN FRANCISCO

L. SIEBERT DESIGNERS AND MANUFACTURERS OF J. GENSLER

SWITCH BOARDS · PANEL BOARDS
PROTECTIVE POWER PANELS

Drendell Electrical and Mfg. Co.

DEMCO

1345-47
HOWARD STREET
SAN FRANCISCO,
CALIF.

PHONES
MARKET 1753
1754

MUELLER

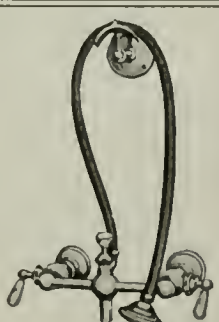
Faucets give full value in wear and service.

The MUELLER COMBINATION SINK FAUCET is especially desirable—Hot, Cold or Tempered water through spout or spray?

THE NEWEST AND BEST THING IN FAUCETS

H. MUELLER MFG. CO.

1072-76 HOWARD STREET SAN FRANCISCO, CALIF.



When writing to Advertisers please mention this magazine.

MILLER FOLDING IRONING BOARD

ELIMINATES WALL CABINET—IS INSTALLED IN KITCHEN CUPBOARD

NO { PLASTER GROUNDS / CASING OR PAINTING — SAVES { WALL SPACE AND LABOR / TIME AND MATERIAL

Exhibited and sold by { LANNOM BROS. MFG. CO / 362 Magnolia St., Oakland, Calif.

Send for Catalogue to { W. N. MILLER / 844 Thirteenth St., Oakland

PACIFIC ELECTRIC CLOCK CO.

J. J. Estabrook

Manufacturers and distributors of Electric Clock Systems and Time Keeping Devices for Schools, Public and Private Buildings. Plans and Specifications prepared by competent engineers without charge.

86 THIRD STREET
SAN FRANCISCO, CALIF.

C. F. STAUFFACHER, President — A. A. STAUFFACHER, Vice-President

THE FINK & SCHINDLER CO.

Manufacturers of INTERIOR WOODWORK AND FIXTURES
BANK, OFFICE AND STORE FITTINGS
SPECIAL FURNITURE

218-228 THIRTEENTH STREET, Bet. Mission and Howard Sts. — SAN FRANCISCO, CAL. Telephone Market 474

QUALITY **ARISTO PAINTING CO.** RELIABILITY

SPRAY PAINTING

COMMERCIAL AND INDUSTRIAL PAINTERS

Phone Douglas 4779 — 39 Tehama Street, San Francisco — Roofs Repaired

ERNEST HELD, General Manager

HOME MANUFACTURING CO.

BANK, STORE AND OFFICE FITTINGS
FURNITURE AND HARDWOOD INTERIORS
CABINET WORK OF EVERY DESCRIPTION

543 and 545 BRANNAN ST. Phone Kearny 1514 — San Francisco, Cal.

Mullen Manufacturing Co.

BANK, STORE AND OFICE FIXTURES—CABINET WORK OF GUARANTEED QUALITY—CHURCH SEATING

Telephone Market 8692 — Office and Factory: 64 Rausch St., Bet. 7th and 8th Sts. San Francisco

JAMES L. McLAUGHLIN

GENERAL CONTRACTOR

Phones Douglas 6645—6646 — 251 KEARNY STREET, SAN FRANCISCO

Dolan Wrecking & Construction Co.

(D. J. DOLAN)

Lumber, Lath, Nails, Shingles, Doors, Windows and Plumbing Supplies, New and Second Hand

Phone Market 4264 — Office and Yard, 1607-1639 MARKET ST., SAN FRANCISCO

When writing to Advertisers please mention this magazine.

Fire Protection Corporation

Engineers and Contractors

FOR

Automatic

Sprinkler Systems

315 Montgomery St. San Francisco, Cal.

Phone Sutter 2993

Phone Doug. 3123-4 Oak. 5050-1

EASYSET

STORE FRONTS

GLASS OF ALL KINDS

Mirrors Art Bevel Plate

Cobbledick-Kibbe Glass Co.

666-668 HOWARD ST.
SAN FRANCISCO, CAL.

WASHINGTON AT THIRD ST.
OAKLAND, CAL.

WIRING

CONTRACTORS

CENTRAL ELECTRIC CO.

AND DEALERS

177-179 Minna Street, San Francisco

Phone Douglas 4832

A BETTER IRON

TONCAN METAL

Phone Douglas 3775

United Alloy Steel Corporation

CANTON, OHIO

Black Galvanized and Blue Annealed Sheet

WESTERN SALES OFFICES

Santa Fe Building, San Francisco

LOS ANGELES 528 Title Insurance Bldg.

PORTLAND 301 Henry Building

REMILLARD BRICK CO.

Est. 1869

Manufacturers

COMMON BRICK

332 Phelan Building
San Francisco, Calif.

Plants: San Jose, Pleasanton

The Fidelity and Casualty Company of New York

CASUALTY INSURANCE
and SURETY BONDS

California Office

Balfour Building San Francisco

Assets, $27,000,000; Surplus, $7,000,000

JOHNS-MANVILLE, Inc.

of California

SERVICE TO ARCHITECTS

Architectural Acoustics and Sound-Proofing, "Colorblende" Asbestos Shingles, Asbestos Prepared Roofings, Asbestos Built-up Roofings, Mastic Industrial Flooring, Keystone Hair Insulating and Sound-Deadening.

JOHNS-MANVILLE SERVICE

COVERS THE CONTINENT

JOHNS-MANVILLE, Inc.

of California

DISPLAY ROOM

500 POST STREET

San Francisco

"BLAZING" THE TRAIL

We've been doing it for many years—giving the Sportsman Better Value for Quality than he ever before received. "Value at a Fair Price" in everything for the Sportsman.

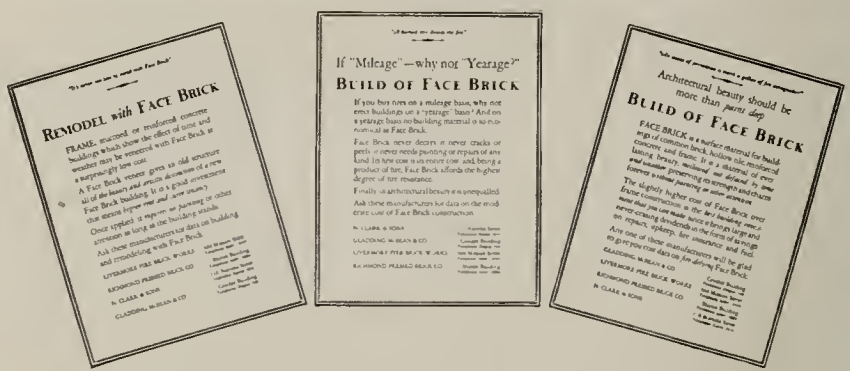
The Ellery Arms Company

583-85 MARKET ST

SAN FRANCISCO, CAL

SEND FOR CATALOG

The Sign of Quality


REMODEL with FACE BRICK
If "Mileage"—why not "Yearage?"
BUILD OF FACE BRICK
Architectural beauty should be more than paint deep
BUILD OF FACE BRICK

299,755 Bay Cities People being told about Face Brick

The Face Brick interests of the Bay Cities are telling the public, through the newspapers, the advantages of Face Brick construction, its architectural distinction and charm, its lasting satisfaction, and its fundamental economy.

The Architect is seeing the results of this intensive educational work in the receptive attitude of his clients toward Face Brick.

We shall be glad to send to any interested architect a complete file of these Face Brick advertisements.

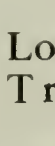
LIVERMORE FIRE BRICK WORKS
604 Mission Street — Telephone Sutter 4345

RICHMOND PRESSED BRICK CO.
Sharon Building — Telephone Sutter 4884

Members
American Face Brick Association

through whose courtesy this space in Architect and Engineer is made available.

Look for this Trademark



And if it's there don't worry any more about your Valves and Fittings

Specify and insist upon having

The Kelly & Jones Co. Valves and Fittings

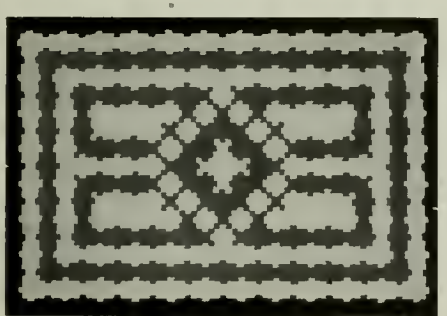
Byers Genuine Wrought Iron Pipe

Republic Steel Pipe

Complete Line of Plumbing Supplies
Large Stocks for Prompt Delivery
Catalogue on request

California Steam & Plumbing Supply Co.

671-679 Fifth Street, Corner Bluxome
SAN FRANCISCO CALIFORNIA



INTERLOCKING RUBBER TILING

The Elevator Floor

whether in Office Building, Hotel or Department Store, is subjected to a great deal of wear and tear.

—SPECIFY—

INTERLOCKING RUBBER TILING

and you've provided your client's building with a Durable, Economical, Practical material that is sure to give satisfaction. Twenty tons installed in the Standard Oil Building, San Francisco. Stock on hand for immediate delivery.

NEW YORK BELTING AND PACKING CO.

NEW YORK

San Francisco Branch 519 MISSION ST. Phone Douglas 1837

Small booklet of designs mailed on request

VIEW AT NILES PLANT

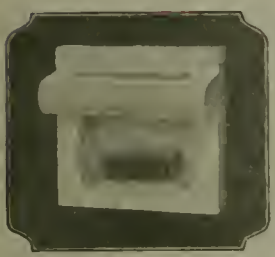
CRUSHED ROCK
GRAVEL **For Building and Road Construction**
SAND **COAST ROCK AND GRAVEL CO.**
500 Call Building SAN FRANCISCO Phone Sutter 3990
Plants at Niles, Fair Oaks, Oroville, Eliot, Piedra, Solo, and Marysville

THE WORLD'S WORD FOR ELEVATOR SAFETY

The Architect who specifies OTIS ELEVATORS may do so with the assurance that the responsibility of the Otis Elevator Company extends beyond satisfactory installation. Buildings equipped with OTIS ELEVATORS enjoy the advantage of prompt service and careful inspection rendered by over a hundred Otis offices.

OTIS ELEVATOR COMPANY
2300 STOCKTON ST. SAN FRANCISCO
OFFICES IN ALL PRINCIPAL CITIES

Why is tile soaked in water before it is used



Combination Soap Holder and Safety Grip

Sponge Holder

Tumbler Holder

The reason tile and china must march hand-in-hand

AS EVERY tile contractor knows, tile must be soaked before it is installed in bathroom walls. This soaking is necessary in order to prevent undue absorption, by the porous tile, of the moisture contained in the cement. Otherwise, the cement would dry too quickly, destroying its holding properties so that the tile would loosen from the wall. Another thing, after tile has been in service a few months, notice the series of fine cracks in the thinly glazed surface.

Just so with TILE built-in bathroom fixtures. They, too, are porous. The thinly glazed surface of the tile after a time becomes cracked and crazed. Through continuous daily use, these cracks admit soapy water or other liquids. Soon the tile fixtures become stained and unsightly to the eye and unsanitary.

Because of this quality, TILE should only be used for covering walls, while, for fixtures, Fairfacts CHINA Bathroom Fixtures should be used. They never crack, craze or stain. Fairfacts Fixtures are made of solid snow-white china which refuses to absorb the moisture and foreign matter. For dignity, grace of line and variety of design they are unmatched.

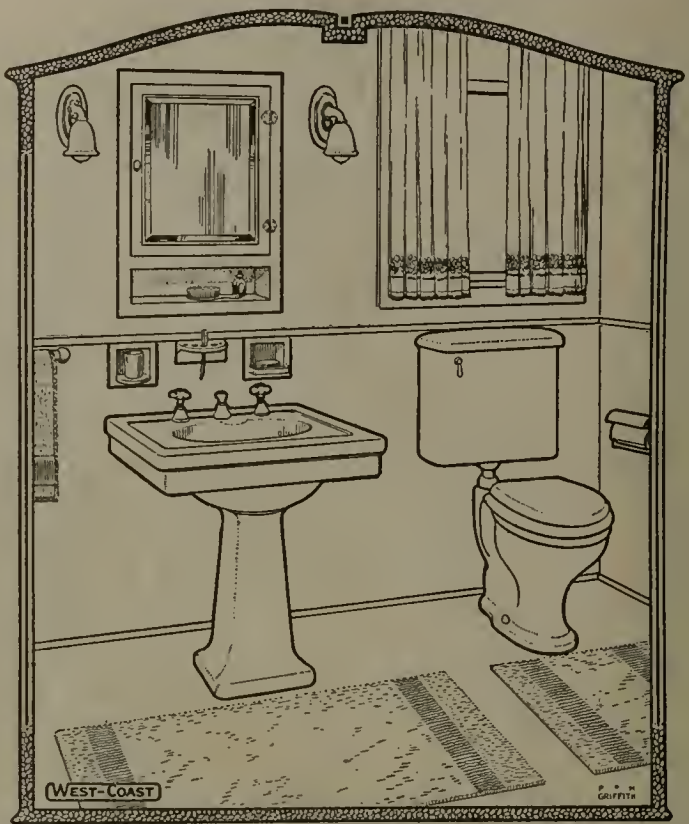
Write for Catalog F. Details and specifications also appear in Sweet's Catalog.

Fairfacts Fixtures are installed by tile contractors—the only trade that does this work and should be included in the tile contract. We do not sell the plumbing trade. The Fairfacts Company, Inc., Manufacturers. Dept. E, 234-236 W. 14th Street, New York City.

(Look for this BATHROOM Fairfacts FIXTURES *Trade Mark)*

Fairfacts Fixtures

BUILT IN YOUR BATHROOM WALLS



"West Coast" Two-Fired Vitreous China Pedestal Lavatory, Closet and Tank

You Can Safely Recommend "*West Coast*" Products

When your clients ask for advice in the selection of plumbing fixtures you may recommend "West Coast" products with confidence.

Attractive in design, with an immaculate, snow-white surface, "West Coast" Plumbing Fixtures add beauty to any bathroom. Then, too, the materials and workmanship are specially designed to give lasting service.

WEST COAST Porcelain Manufacturers

Wells Fargo Building, San Francisco

Plant, Millbrae, California

The ARCHITECT & ENGINEER

DECEMBER 1923

Published in San Francisco
50 cents a copy - $2.50 a year

Did you know that Pacific Vitreous China Ware is of higher quality than any other brand?

TRADE MARK REGISTERED

PACIFIC

PLUMBING FIXTURES

PACIFIC SANITARY MANUFACTURING CO.
Main Office; 67 New Montgomery St., San Francisco
Factories: Richmond and San Pablo, California
Branches: Los Angeles, Portland, Seattle

W.A.C.

FLOATINE
will not soften, run, leak or slide

Free yourself from roof troubles *Specify* PABCO 10 and 20 Year Roofs which require the use *of*

FLOATINE

The PARAFFINE COMPANIES *Inc*

A $12,000,000 Corporation Operating 17 Plants on the Pacific Coast

PABCO PRODUCTS

San Diego Los Angeles San Francisco
Oakland Portland Seattle

High School Bldg.,
Watsonville, Cal.
W. H. Weeks, Architect

The One Finish
for Cement and Stucco

Bay State Brick and Cement Coating is the one ideal finish for stucco and cement. This coating beautifies a house and at the same time waterproofs it.

Dingy and leaden walls take on a new, artistic appearance. Weathered and drab concrete assumes a beauty that is striking. Bay State Brick and Cement Coating is not merely a surface paint. This master finish creeps into the pores of the walls and seals them against all dampness. The hardest rain cannot beat through a coating of Bay State.

Bay State Brick and Cement Coating comes in a complete range of colors and in a pure, rich white.

Send for samples and booklet today.

Wadsworth, Howland & Co., Inc.

New York Boston Philadelphia

Graham Hambly & Son, 1333 East 7th St., Los Angeles, Cal.
James Hambly & Son, 229 Clay St., San Francisco, Cal.
Jones-Moore Paint House, San Diego, Cal.
McCracken - Ripley Bldg. Material Co., 45-4th St., Portland, Ore.
F. T. Crowe & Co., 508 West Lake Ave., Seattle, Wash.

THE BAY STATER

BAY STATE
Brick and Cement Coating

"I have specified 'The Best Glass,' thereby winning the respect of the homeowner, the appreciation of his wife, and the thankfulness of the glazier."

Why It's the Best Glass

Our melting furnaces, **the largest in the world**, permit uniformly melted glass. Improved mechanical processes of drawing and blowing give greater tensile strength and higher modulus of rupture than any other window glass, plate glass or rolled glass.

The best flattening ever obtained is the result of our improved blowing machines.

New methods of flattening give our glass a wonderfully even surface, preserving the brilliant lustre produced in drawing. Our glass is **uniformly** flat, containing no reverse curves, has less wave than other glass, and consequently shows less distortion.

It is **uniform** in thickness, and, being perfectly annealed, does not break as easily as ordinary glass.

Washing in an acid bath prevents discoloration and permits ready detection of defects.

Our glass cuts perfectly on both sides and is graded to a standard of quality now recognized as national and distinctly higher than foreign standards.

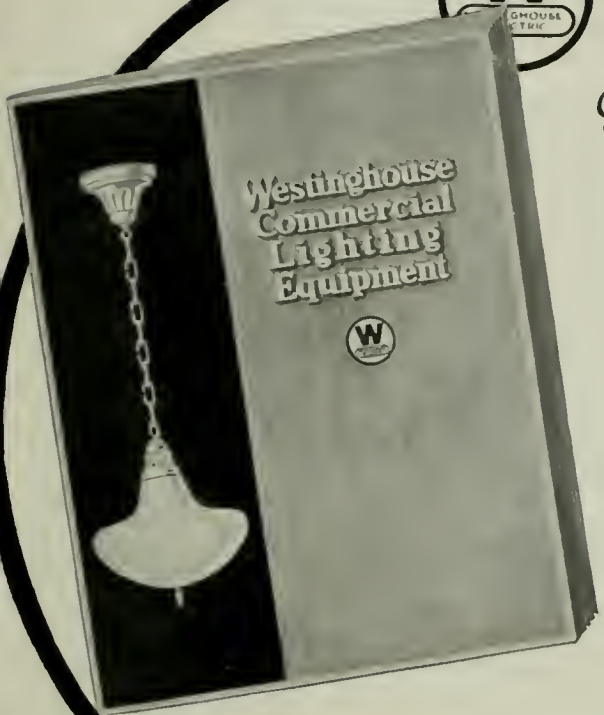
Uniformity of flatness, well made boxes, careful packing and skillful loading prevents breakage in shipment.

Specify "The Best Glass," the quality of which is guaranteed by the elliptical trade mark on every box.

AMERICAN WINDOW GLASS CO. PITTSBURG, PA. U.S.A.

You will be interested in our Chrystal Sheet, 34 and 39 oz. per sq. ft. Write for samples.

AMERICAN WINDOW GLASS CO
GENERAL OFFICES: PITTSBURGH, PA. The BEST Glass BRANCHES IN PRINCIPAL CITIES



Prepared expressly for Architects and Engineers

SOL-LUX Luminaires

are distinctive. Their flexibility of design is such that they fill practically every commercial lighting requirement.

Sol-Lux possesses a dozen distinctive advantages over other commercial units.

It is the ideal luminaire for **stores, banks, office buildings, schools, hotels and libraries.**

Your client will like Sol-Lux.

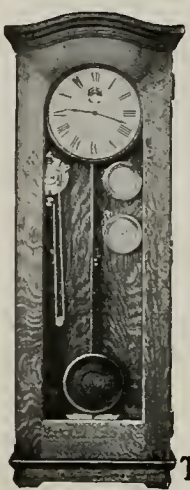
For your copy of Catalogue 40-B write to our nearest district office.

Westinghouse Electric & Manufacturing Company
George Cutter Works **South Bend, Indiana**

Western District Offices:
Denver Los Angeles San Francisco Seattle
And All Principal Cities

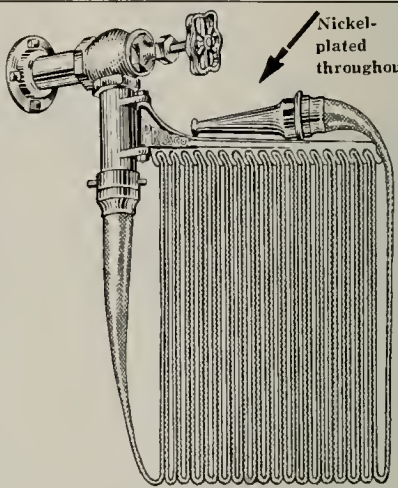
Westinghouse

"Standard"



THIRTY-SIX years' experience manufacturing and installing Electric Time Keeping Systems. Helpful engineering data cheerfully furnished architects, engineers and school boards insuring satisfactory results, and a direct factory branch office completely equipped to render immediate service.

The Standard Electric Time Company
461 Market St., San Francisco, Cal.
Telephone Sutter 241



PRASCO PINLESS
SWINGING HOSE RACK

For 50, 75, 100 ft. Underwriters Unlined Linen Hose

No pins to break, bend, or jam
Hose pays off one loop after the other

Plant Rubber & Asbestos Works
537 Brannan St. San Francisco Tel. Sutter 2100

A man saves, say $10 per day, in heating a home with a

BIRCHFIELD
Reg U.S. Pat Off

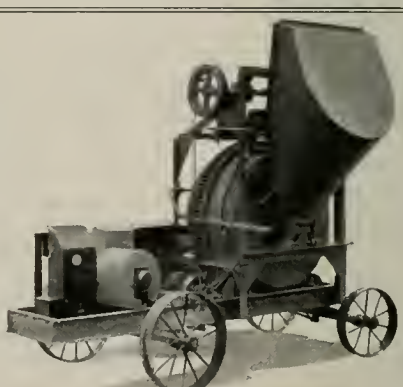
Steel Heating Boiler

Are you justified in saying that a Birchfield pays for itself, when the cost of a Birchfield has been saved at the rate of $10 per day?

WALKER S. LELAND
660 Howard St. San Francisco

LARIMER & LAUER
1824 So. Hope St. Los Angeles

BIRCHFIELD BOILER CO.
Manufacturers, Tacoma, Wash.



20th Century

Concrete Mixers are Built in California. A real Mixer for heavy work

Carried in stock in sizes from 4 to 40 Cubic Yards

EDWARD R. BACON COMPANY
INCORPORATED
CONSTRUCTION ERBCO EQUIPMENT
FOLSOM at 17TH ST., SAN FRANCISCO
Los Angeles Sacramento Fresno

The Architect and Engineer—December, 1923—Vol. LXXV, No. 3. Published monthly—$2.50 a year, 627 Foxcroft Building, San Francisco, California. Entered as second-class matter, November 2, 1905, at the Post Office at San Francisco, California, under the act of March 3, 1879.

The Experience of 42 Years At Your Disposal

IN the 42 years which S. W. Straus & Co. has been in existence, we have financed hundreds of millions of dollars in building construction from one coast to the other. All that these 42 years have taught us in the economy and efficiency of design, plan and construction is at your disposal. The increasing number of architects and builders who bring their problems to us, in advance of arranging the details of financing, leads us to believe that we render a valuable service. You can learn about the STRAUS PLAN by writing or calling at our offices.

S. W. STRAUS & CO.

ESTABLISHED 1882 OFFICES IN FORTY CITIES INCORPORATED

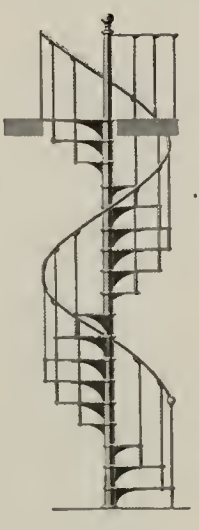
522 South Spring St.
LOS ANGELES

255 Empire Building
SEATTLE

79 Post Street
SAN FRANCISCO

42 YEARS WITHOUT LOSS TO ANY INVESTOR

© 1923—S. W. S. & Co., Inc.



We specialize in

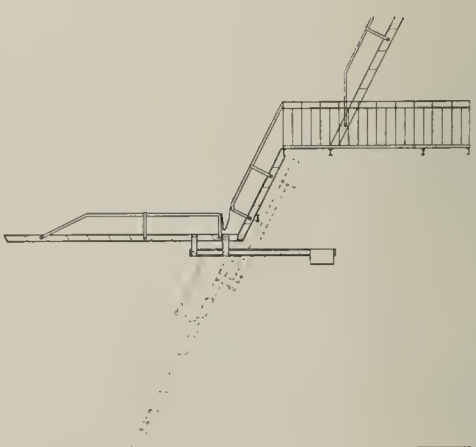
STAIR WORK

C. I. & W. I. Stairs
Spiral Stairs
Counter-balanced Stairs
Theatre Fire Escapes, Etc.

Ornamental Iron Work

Steel Sash

Wire Work



Michel & Pfeffer Iron Works
HARRISON AND TENTH STREETS
SAN FRANCISCO, CALIF.

Self-Locking, Counter-balanced Fire Escape Stairs.
Approved by S. F. Fire Dept.

Architects' Specification Index

(For Index to Advertisements, see next page)

ASBESTOS MATERIALS
Johns-Manville Inc., of California, 500 Post street, San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.
Jones Bros. Asbestos Supply Co., Inc., 512 Second St., San Francisco.
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

AUTOMOBILE TURNTABLES
M. E. Hammond, Pacific building, San Francisco.

ART METAL
Federal Ornamental Iron and Bronze Co., 16th St., and San Bruno Ave., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
California Artistic Metal & Wire Co., 349 Seventh street, San Francisco.

ARCHITECTURAL TERRA COTTA
Gladding, McBean & Company, Crocker Bldg., San Francisco.
Livermore Fire Brick Works, 604 Mission St., San Francisco.
Tropico Potteries, Inc., Glendale, Cal.

BANK FIXTURES AND INTERIORS
C. F. Weber & Co., 601 Mission St., San Francisco.
Home Mfg. Co., 543 Brannan St., San Francisco.
Mullen Manufacturing Co., 64 Rausch St., San Francisco.
Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.
The Fink & Schindler Company, 218-13th St., San Francisco.

BANK SCREEN REFLECTORS
I. P. Frink, Inc., 77 O'Farrell Street, San Francisco.

BATHROOM ACCESSORIES
The Fairfacts Company, Inc., 234 W. 14th St., New York.

BEDS—WALL
California Wall Bed Co., 714 Market St., San Francisco.
Marshall & Stearns Co., Phelan Bldg., San Francisco.

BELTING AND PACKING
New York Belting and Packing Company, 519 Mission St., San Francisco.
H. N. Cook Belting Co., 401 Howard St., San Francisco.
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

BLACKBOARDS
C. F. Weber & Co., 601 Mission St., San Francisco, Los Angeles and Reno, Nevada.
Stewart Sales Co., 247 Rialto Building, San Francisco.

BLINDS—VENETIAN AND DIFFUSELITE
The J. G. Wilson Corporation, 621 North Broadway, Los Angeles.
Western Blind & Screen Company, factory, Los Angeles; San Francisco representatives, Edward C. Dehn, Hearst Bldg., and C. F. Webber Co.

BOILERS
Birchfield Boiler Company, Tacoma, Washington. See advertisement for Coast agencies.
Kewanee Boiler Company, Factory Branch, Exposition Building, San Francisco.
Kewanee Water Supply System, Simonds Machinery Co., 117 New Montgomery St., San Francisco.
Main Iron Works, 1000 Sixteenth Street, San Francisco.

BONDS FOR CONTRACTORS
Bonding Company of America, Kohl Bldg., San Francisco.
Globe Indemnity Co., 444 California St., San Francisco.
Fidelity & Casualty Co. of New York, Balfour Bldg., San Francisco.
Standard Accident Insurance Company, California Commercial Union Building, San Francisco.

BOXBOARD FIBRE SHIPPING CASES
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

BRASS GOODS, CASTINGS, ETC.
H. Mueller Manufacturing Co., 1072-76 Howard St., San Francisco.

BRICK FACE, COMMON, ENAMEL, GLAZED
Remillard Brick Company, Phelan Building, San Francisco.
Richmond Pressed Brick Co., Sharon Bldg., San Francisco. Plant at Richmond, Cal.
Livermore Fire Brick Works and California Brick Co., 604 Mission St., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.
Cannon & Co., Sacramento; and 77 O'Farrell St., San Francisco.

BRICK & CEMENT COATING
Armorite and Concreta, manufactured by W. P. Fuller & Co., all principal Coast cities.
Minwax Co., Inc., 22 Battery St., San Francisco and 653 S. Clarence St., Los Angeles.
The Paraffine Companies, Inc., 475 Brannan St., San Francisco.
R. N. Nason & Co., 151 Potrero Ave., San Francisco.
Wadsworth, Howland & Co., Inc., Jas. Hambly & Son, 1333 E. 7th St., Los Angeles, and 229 Clay St., San Francisco.

BRICK STAINS
Samuel Cabot Mfg. Co., Boston, Mass., agencies in San Francisco, Oakland, Los Angeles, Portland, Tacoma and Spokane.
Armorite and Concreta, manufactured by W. P. Fuller & Co., all principal Coast cities.

BUILT-IN FIXTURES
Built-In Fixture Company, 2608 San Pablo Ave., near Dwight Way, Berkeley, and Hoosier Store, Pacific Building, San Francisco.

BUILDERS' HARDWARE
Joost Bros., agents for Russell & Erwin Hardware, 1053 Market St., San Francisco.
The Stanley Works, New Britain, Conn., Coast sales offices, San Francisco, Los Angeles, and Seattle, Wash.
Palace Hardware Company, Agents Corbin goods, 581 Market St., San Francisco.
Richards-Wilcox Mfg. Co., Aurora; Ewing-Lewis Co., 626 Underwood Bldg., San Francisco.

BUILDING MATERIALS, SUPPLIES, ETC.
Pacific Materials Co., Underwood Bldg., San Francisco.

RALSTON IRON WORKS, INC.
ESTABLISHED 1876
Office and Works
20th and Indiana Streets
SAN FRANCISCO
Phone Mission 5230
Structural Steel
Representing
Pauly Jail Building Co.

An Index to the Advertisements

	Page
American Face Brick Ass'n.	129
American Marble & Mosaic Co.	48
American Rolling Mill Co.	43
American Window Glass Co.	2
Art Stone Distributing Co.	46
Aristo Painting Co.	160
Atlas Heating & Ventilating Co.	150
Babcock Co., C. B.	48
Bacon, Edward R., Co.	4
Badt-Falk & Co.	149
Bartlett, John M.	145
Barrett & Hilp	148
Bass-Hueter Co.	33
Beckwith, Herbert	145
Beeco	159
Benjamine Electric Mfg. Co.	42
Berkeley Electric Co.	158
Birchfield Boiler Co.	4
Bowser, S. F. & Co., Inc.	143
Brininstool Paint Co.	3rd Cover
Brooks & Doerr	140
Browne - Langlais Electric Co.	158
Bruce, E. L. Co.	39
Bull Dog Floor Clip Co.	17
Bunting Iron Works	47
Butte Electric & Mfg. Co.	158
Buttonlath Mfg. Co.	121
Cabot, Samuel Co.	141
California Artistic Metal & Wire Co.	156
California Brick Co.	38
Cadwallader, Gibson Co.	37-132
California Steam & Plumbing Supply Co.	163
California Stucco Products Co.	40
California Wall Bed Co.	136
Carter Bloxonend Flooring Co.	40
Central Electric Co.	161
Central Iron Works	156
Clinton Construction Co.	154
Coast Rock and Gravel Co.	168
Cochran, W. L. Inc.	16
Cobbledick-Kibbe Glass Co.	161
Coleman, Alex.	150
Columbia Marble Co.	142
Cotton & Co.	14
Cook Marble Co.	13
Crane Co.	152
Crittall Casement Window Co.	135
Cyclops Iron Works	154
Decker Electrical Construction Co.	158
Del Monte Properties Co.	136
Detroit Steel Products Co.	24
Dierrsen, Co., D.	24
Dolan Wrecking Co.	160
Drendell Electric Co.	159
Elevator Supplies Co., Inc.	141
Ellery Arms Co.	161
Evans, W. L.	143
Fairfacts Fixtures	34A
Federal Ornamental Iron Works	156
Fidelity & Casualty Co.	161
Fink & Schindler	160
Fire Protection Corp.	161
Fire Protection Eng. Co.	154
Fire Retardent Products Co.	140
First Federal Trust Co.	155
Flagg, Edwin H. Scenic Co.	146
Frink, I. P., Inc.	135
Fuller & Goepp.	29
Fuller, W. P. & Co.	28
Garnett Young & Co.	14
General Fireproofing Co.	31
Gilley-Schmid Co.	144
Gladding, McBean & Co.	45
Globe Indemnity Co.	149
Golden Gate Iron Works	156
Grinnell Company of Calif.	154
Gunn, Carle Company	30
Haines, Jones & Cadbury Co.	131
Handy Self - Cleansing Flush Valve Co.	34
Hannah Bros.	146
Hammond, M. E.	155
Hauser Window Co.	139
Haws Sanitary Drinking Faucent Co.	157
Hermann Safe Co.	145
Herrick Iron Works	156
Higgins Lumber Co.	151
Hillard, C. J.	142
Hill, Hubbell & Co.	134
Holbrook, Merrill & Stetson	32
Home Mfg. Co.	160
Hulting, Hurst & Hulting	154
Hunt & Co., Robert W.	134
Hunter & Hudson	144
Illinois Engineering Co.	154
Indiana Limestone Ass'n.	23
Ind. Automatic Spk'r Co.	10
Johnson, S. T.	47
Johns, Manville Co.	161
Johnson Service Co.	150
Jones Bros. Ashestos Co.	155
Joost Bros.	144
Judson Mfg. Co.	156
Kennedy, David E.	155
Kennedy Valve Co.	121
Kewannee Boiler Co.	132
Kinnear Mfg. Co.	29
Kissel, I. R.	146
Knowles, A.	148
Lannom Bros.	160
Larson-Siegrist Co., Inc.	145
Lawson & Drucker	150
Lawton & Vezey	146
Littlefield, R. W.	148
Lindgren & Swinerton, Inc.	40
Mac Gruer & Simpsan	157
MacRorie-McLeran Co.	152
Main Iron Works	34
Magner Bros.	144
Mangrum & Otter	24
Marshall & Stearns	44
McCabe Hanger Mfg. Co.	26
McCray Refrigerator Co.	147
McLeran, R. Co.	149
McLaughlin, Jas. L.	160
McLaughlin Metal Works	138
Michel & Pfeffer Iron Works	6
Minwax Co., Inc.	147
Montague Range & Furnace Co.	126
Monson Bros.	146
Mortenson Construction Co.	156
Mott Company	159
Mueller, H., Mfg. Co.	159
Mullen Mfg. Co.	160
Musto Sons-Keenan Co.	13
Nason, R. N. & Co.	12
National Mill & Lumber Co.	32
National Steel Fabric Co.	130
National Terra Cotta Society	123
NePage, McKinney Co.	158
Newberry Electric Co.	158
Newman, H. G.	150
New York Belting Co.	163
Nordstrom, David	148
Oak Flooring Bureau	19
Oakley Paint Mfg. Co.	147
Ocean Shore Iron Works	157
Old Mission Portland Cement	35
Otis Elevator Company	168
Pacific Coast Steel Co.	157
Pacific Electric Clock Co.	160
Pacific Elevator Co.	24
Pacific Fire Extinguisher Co.	18
Pacific Foundry Co.	140
Pacific Gas & Electric Co.	20
Pacific Mfg. Co.	145
Pacific Materials Co.	36
Pacific Plumbing Fixture Co.	2nd Cover
Pacific Rolling Mills	22
Pacific Portland Cement Co., Consolidated	36
Palace Hardware Co.	36
Palm Iron Works	22
Paraffine Companies	1
Parker, K. E. Co.	148
Pelton Water Wheel Co.	11
Peters Construction Co.	146
Peterson, Carl H.	149
Petrium Sanitary Sink Co.	44
Phillips, Chas. T. Co.	154
Picard, W. H.	150
Pittsburgh Water Heater Co.	144
Pope & Talbot	151
Plant Rubber & Asbestos Works	4
Potter Radiator Co.	34
Portland Cement Ass'n.	137
Quandt, A. & Sons	9
Ralston Iron Works	7
Randall Control Corp.	144
Ray Mfg. Co.	47
Raymond Granite Co.	25
Richards-Wilcox Mfg. Co.	138
Richmond Pressed Brick Co.	127
Remillard Brick Co.	161
Roberts Mfg. Co.	155
Robertson Co., H. H.	140
Rotary Oil Burner Company	47
Rumpf, H.	139
Ruud Heater Co.	144
Sandusky Cement Co.	125
Santa Fe Lumber Co.	151
Scott Company	145
Schrader Iron Works	156
Simmons, O. M., Co.	12
Simmonds Machinery Co.	34
Sloane, W. & J.	17
Sommer, I. M.	148
Soule, Edw. L. Co.	132
Smith Electric Co.	10
S. F. Elevator Co.	150
Spencer Elevator Co.	149
S. & S. Tile Co.	154
Standard Electric Time Co.	4
Standard Fence Co.	149
Standard Supply Co.	158
Standard Varnish Works	9
Stanley Works	155
Steelform Contracting Co.	148
Stewart Sales Co.	155
St. John, Robert L.	16
Strable Hardwood Co.	34D, 152
Sunset Lumber Co.	151
Straus, S. W. & Co.	5
Tittle, H. S.	158
Toledo Scale Co.	11
Tompkins-Kiel Marble Co.	41
Tormey Co.	144
Tropico Potteries, Inc.	45
Trost, Robert	146
Truscon Steel Co.	30
United Alloy Steel Corp.	161
United Materials Co.	127
U. S. Metal Products Co.	27
Universal Exhibits	46
Van Emon Elevator Co.	145
Van Fleet-Freear Co.	20
Vogt, Alfred	146
Vonnegut Hardware Co.	15
Vermont Marble Co.	142
Vukicevich & Bagge	148
Wadsworth, Howland & Co.	2
Wayne Tank and Pump Co.	34B & C
Walter, D. N. & E. Co.	142
Weber, C. F. Co.	152
Wells, A. F.	145
Wesix Electric Heater	18
West Coast Porcelain Co.	Back Cover
Western Asbestos & Magnesia Co.	22
Western Blind & Screen Co.	21
Western States Seating Co.	145
Western Iron Works	22
Westinghouse Mfg. Co.	3
White Bros.	133
Wickwire Spencer Steel Corp.	40
Williams Radiator Co.	147
Wilson, J. G., Corp.	26
Wilson, W. F. Co.	150
Witt, G. E.	48
Zelinsky, D. & Co.	149

A. Quandt & Sons

OUR WORK IS THE BEST GUARANTEE OF THE QUALITY OF OUR SERVICE

374 GUERRERO ST. **San Francisco**

Painters - Decorators

SINCE 1885

3319 CENTRAL AVE. **Los Angeles**

ARCHITECTS' SPECIFICATION INDEX—Continued

Waterhouse-Wilcox Co., 523 Market St., San Francisco.
C. H. Jensen Co., Call Building, San Francisco.
Standard Supply Company, Standard Avenue, near Webester Street, Alameda.

BUILDING PAPER
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

BUILDING TILE (Burned Clay)
California Brick Co., 604 Mission St., San Francisco.

BURGLAR ALARMS
Smith Electric Company, 50 Natoma St., San Francisco.

CABINET MAKERS
Fink & Schindler Company, 218 13th St., San Francisco.
Home Manufacturing Company, 543 Brannan St., San Francisco.
Mullen Manufacturing Company, 64 Rausch St., San Francisco.
Lannom Bros. Mfg. Co., 5th and Magnolia Sts., Oakland.
Pacific Mfg. Co., San Francisco, Los Angeles and Oakland.

CEMENT
Atlas Portland Cement Co., agencies in all principal Coast cities.
Old Mission Portland Cement Co., Mills Bldg., San Francisco.
Medusa Stainless White Cement, plain and waterproofed, carried in stock and sold by leading building supply dealers in California, Oregon and Washington.
The Paraffine Companies, San Francisco, and principal Coast Cities.
Pacific Portland Cement Co., Pacific Building, San Francisco; Portland, San Jose and Los Angeles.

CEMENT EXTERIOR WATERPROOF PAINT
Armorite, sold by W. P. Fuller & Co., all principal Coast cities.
Minwax Co., Inc., 22 Batery St., San Francisco and 653 S. Clarence St., Los Angeles.
The General Fireproofing Company, 20 Beale Street, San Francisco
Bay State Brick and Cement Coating, sold by James Hambly, 229-233 Clay St., San Francisco.

CEMENT STUCCO
"California" sold by California Stucco Products Company, Holbrook building, San Francisco.

CEMENT TESTS—CHEMICAL ENGINEERS
Robert W. Hunt & Co., 251 Kearny St., San Francisco.

CLAY PRODUCTS
California Brick Co. and Livermore Fire Brick Works, 604 Mission St., San Francisco.
Cannon & Co., Sacramento, Cal.
Gladding, McBean & Co., Crocker Bldg., San Francisco.
Los Angeles Pressed Brick Co., Frost Bldg., Los Angeles.
Tropico Potteries, Inc., Glendale, Cal.
United Materials Co., Sharon Bldg., San Francisco.

CLOCKS—ELECTRIC TIME
Standard Electric Time Co., 461 Market St., San Francisco.
Pacific Electric Clock Company, 86 Third St., San Francisco.

COLD STORAGE PLANTS
Cyclops Iron Works, 837 Folsom St., San Francisco.

COMPOSITION FLOORS
"Linotol" plastic flooring, Hill, Hubbell & Co., 115 Davis St., San Francisco; 410 San Fernando Bldg., Los Angeles.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.
Hoff Magnesite Co., San Francisco. Miller & Alf, 337 Monadnock Bldg., San Francisco, general agents.

CONCRETE OR CEMENT HARDENER
Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
The General Fireproofing Company, 20 Beale Street, San Francisco

CONCRETE FURNITURE
Art Stone Distributing Company, 2-4 Valencia St., at Market, San Francisco.

CONCRETE MIXERS
Foote and Jaeger mixers sold by Edward R. Bacon Co., 51 Minna St., San Francisco, also Los Angeles.

CONCRETE REINFORCEMENT
Edw. L. Soule Co., Rialto Bldg., San Francisco.
Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
Clinton Welded Wire Fabric, Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.
Judson Mfg. Co., 817-821 Folsom St., San Francisco.
Pacific Coast Steel Company, Rialto Bldg., San Francisco.
Triangle Mesh Fabric. Sales agents, Pacific Materials Co., 525 Market St., San Francisco.
Truscon Steel Co., 709 Mission St., San Francisco.
Radt-Falk Co., Call-Post Bldg., San Francisco.

CONDUITS
"Shecarduct," Garnett Young & Company, 612 Howard St., San Francisco.

CONTRACTORS, GENERAL
Barrett & Hilp, 918 Harrison St., San Francisco.
Herbert Beckwith, Everson Bldg., Oakland.
Larsen-Siegrist Co., Inc., 807 Claus Spreckels Bldg., San Francisco.
Lindgren-Swinerton, Inc., Standard Oil Building, San Francisco
R. W. Littlefield, 357-12th St., Oakland.
K. E. Parker Co., Inc., Clunie Bldg., San Francisco.
Dinwiddie Construction Co., Crocker Bldg., San Francisco.
John M. Bartlett, 357 Twelfth St., Oakland.
Clinton Construction Company, 923 Folsom St., San Francisco.
Monson Bros., 251 Kearny St., San Francisco.
Geo. Wagner, Park Ave., San Francisco.
T. B. Goodwin, 180 Jessie St., San Francisco..

SATINETTE WHITE ENAMEL

FLATTINE CABINET FINISH
ELASTICA INTERIOR AND ELASTICA EXTERIOR

Standard Varnish Works

55 STEVENSON STREET SAN FRANCISCO

Smith Electric Company

"Quality First"

ELECTRICAL CONSTRUCTION

CONTRACTING . WIRING . FIXTURES MOTORS . SUPPLIES . REPAIRING

50 Natoma Street Telephone Sutter 1378

ARCHITECTS' SPECIFICATION INDEX—Continued

McLeran & Co., R., Hearst Bldg., San Francisco.
Vukicevich & Bagge, 815 Bryant St., San Francisco.
Peters Construction Company, 705 Atlas Building, San Francisco, and Builders' Exchange, Oakland.
Robert Trost, 26th and Howard Sts., San Francisco.
I. M. Sommer, 401 Balboa Bldg., San Francisco.
Jas. L. McLaughlin, 251 Kearny St., San Francisco.
Alfred H. Vogt, 185 Stevenson St., San Francisco.
Lange and Bergstrom, Sharon Bldg., San Francisco and Washington Bldg., Los Angeles.
David Nordstrom, 4146 Emerald Street, Oakland.
Carl T. Peterson, 185 Stevenson St., San Francisco.

CONTRACTORS' EQUIPMENT
Edward R. Bacon Co., Folsom at 17th St., San Francisco, and Los Angeles.

CONVENIENCE OUTLETS
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St.

CORK TILE
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.
David E. Kennedy, Sharon building, San Francisco, and Story building, Los Angeles.

CORK TILE FOR FLOORS
Bonded Floors Company, 370 Second St., San Francisco; 263 So. Los Angeles, St., Los Angeles.
David E. Kennedy, Sharon Building, San Francisco, Story Building, Los Angeles.

CRUSHED ROCK
Coast Rock & Gravel Co., Call-Post Bldg., San Francisco.

CURTAINS—STEEL, ROLLING, FIREPROOF
J. G. Wilson Corp., 621 N. Rroadway, Los Angeles.

DAMP-PROOFING AND WATERPROOFING
Armorite Damp Resisting Paint, made by W. P. Fuller & Co., San Francisco.
"Imperial," manufactured by Brooks & Doerr, Merchants National Bank Building, San Francisco.
Minwax Co., Inc., 22 Battery St., San Francisco, and 653 S. Clarence St., Los Angeles.
Samuel Cabot Co., Boston; represented in San Francisco by Pacific Materials Co., Underwood Bldg., San Francisco.
"Pabco" Damp-Proofing Compound, sold by the Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.
The General Fireproofing Company, 20 Beale Street, San Francisco

DOOR HANGERS
McCabe Door Hanger Company, leading hardware stores.
Pitcher Hanger, sold by National Mill & Lumber Co., 326 Market St., San Francisco.
Richard-Wilcox Mfg. Co., the Ewing-Lewis Co., 626 Underwood Building, San Francisco.
Stanley Works, New Britain, Conn... Monadnock Bldg., San Francisco.

DRAIN PIPE AND FITTINGS
"Corrosiron" Acid Proof, manufactured by Pacific Foundry Co., Harrison and 18th Sts., San Francisco.

DRINKING FOUNTAINS
Haws Sanitary Drinking Faucet Co., 1808 Harmon St., Berkeley, and C. F. Weber & Co., San Francisco and Los Angeles.
Crane Company, San Francisco, Oakland, and Los Angeles.
Pacific Porcelain Ware Co., 67 New Montgomery St., San Francisco.
Haines, Jones & Cadbury Co., 857 Folsom St., San Francisco.

DUMB WAITERS
Spencer Elevator Company, 166-7th St., San Francisco.
San Francisco Elevator Company, Inc., 860 Folsom St., San Francisco.
Elevator Supplies Co., Inc., Hoboken. N. J.; San Francisco office, 186 Fifth St.
"Chelsea" dumh waiters, sold by M. E. Hammond, Pacific building, San Francisco.

ELECTRICAL CONTRACTORS
Butte Electrical Equipment Company, 530 Folsom St., San Francisco.
Butte Electric & Manufacturing Co., 956 Folsom St., San Francisco.
Central Electric Company, 177-79 Minna St., San Francisco
NePage, McKenny Co., 589 Howard St., San Francisco.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.
H. S. Tittle, 85 Columbia Square, San Francisco
Brown-Langlais Electrical Construction Co., 315 Fifth Street, San Francisco.
Newberry Electric Company, Alta Bldg., San Francisco
Smith Electric Company, 50 Natoma St., San Francisco.
Decker Electrical Construction Company, 149 New Montgomery St., San Francisco.

ELECTRIC PLATE WARMER
The Prometheus Electric Plate Warmer for residences, clubs, hotels, etc. Sold by M. E. Hammond, Pacific Bldg., San Francisco.

ELECTRICAL PLUGS, RECEPTICALS, SOCKETS, ETC.
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St., San Francisco.

ELECTRICAL SUPPLIES AND EQUIPMENT
"H. & H. Switches," Garnett Young & Co., 612 Howard St., San Francisco.
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St.
Drendell Electrical & Mfg. Co., 1345 Howard St., San Francisco.

ELECTRIC SAFETY INTERLOCKS
Richards-Wilcox Mfg. Co., 525 Market St., San Francisco.

Metropolitan 4597 S. F. Phone, Garfield 204

Independent Automatic Sprinkler Company

Fire Protection Engineers

O. T. Johnson Building, Los Angeles 72 Natoma Street, San Francisco

TOLEDO AUTOMATIC SPRINGLESS SCALES
12 OUNCES TO 20 TONS
for Factories, Warehouses, Wholesale Houses in fact any kind of business where accurate weight is desired
676 MISSION ST. Phone Sutter 250 **TOLEDO SCALE CO.** SAN FRANCISCO California

ARCHITECTS' SPECIFICATION INDEX—Continued

ELECTRIC HEATING
Wesix Electric Heaters, manufactured by W. Wesley Hicks, Rialto Building, San Francisco.

ELEVATORS—PASSENGER and FREIGHT
Pacific Elevator & Equipment Co., 1129 Howard Street, San Francisco.
Otis Elevator Company, Stockton and North Point, San Francisco.
Spencer Elevator Company, 166-7th St., San Francisco.
San Francisco Elevator Co., 860 Folsom St., San Francisco.
Van Emon Elevator Company, 1159 Howard St., San Francisco.

ELEVATOR MOTORS AND CONTROL
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., and First National Bank Bldg., San Francisco, Calif.

ELEVATOR SIGNALS, DOOR EQUIPMENT, ETC.
Elevator Supplies Co., Inc., Hoboken, N. J.; San Francisco office, 186 Fifth St.
Randall Control & Hydrometric Corporation, 265A Minna St., San Francisco, and 523 Central Bldg., Los Angeles.
Richards-Wilcox Mfg. Co., 525 Market St., San Francisco.

ENGINEERS — CONSULTING, ELECTRICAL, MECHANICAL
Hunter & Hudson, Rialto Bldg., San Francisco.
Robert L. St. John, 1011 Flat Iron Bldg., San Francisco
Charles T. Phillips Company, Bank of Italy Bldg., San Francisco, and Roberts Bldg., Los Angeles.

FAIENCE TILE
Tropico Potteries, Inc., Glendale, Cal.

FELTS
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FENCES—WIRE AND IRON
Standard Fence Company, 432 Bryant, San Francisco and 60th and Lowell Sts., Oakland.

FIRE BRICK, TILE & CLAY
Livermore Fire Brick Works, 604 Mission St., San Francisco.

FIRE EXIT LATCHES
Vonnegut Hardware Co., Indianapolis, Ind., represented in San Francisco by Abeel Jensen Co., Call Building.

FIRE ESCAPES
Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
Western Iron Works, 141 Beale St., San Francisco.

FIRE HOSE RACKS
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

FIRE-PROOF DOORS
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
U. S. Metal Products Co., 330-10th St., San Francisco.
Kinnear Mfg. Co., represented in San Francisco by Pacific Materials Co., Underwood Bldg.
The J. G. Wilson Corporation, 621 North Broadway, Los Angeles.

FIRE SPRINKLERS—AUTOMATIC
Fire Protection Engineering Co., 67 Main St., San Francisco.
Grinnell Company of the Pacific, 453 Mission St., San Francisco.
Independent Automatic Sprinkler Co., 72 Natoma St., San Francisco.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.

FIRE RETARDING PAINT
The Paraffine Companies, Inc., 34 First St., San Francisco.
Fire Retardent Products Co., 2838 Hannah St., Oakland. Cal.

FIXTURES—BANK, OFFICE, STORE, ETC.
Home Manufacturing Company, 543 Brannan St., San Francisco.
The Fink & Schindler Company, 218-13th St., San Francisco.
Mullen Manufacturing Co., 64 Rausch St., San Francisco.
C. F. Weber & Co., 985 Market St., San Francisco, and 210 N. Main St., Los Angeles, Cal.

FLOORS, BLOCK
Carter, Bloxonend Flooring Co., Kansas, Mo., represented on Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

FLOOR CLIPS
Bull Dog Floor Clip Sales Co., 77 O'Farrell St., San Francisco, and 600 Metropolitan Bldg., Los Angeles.

FLOORING, HEAVY DUTY
Carter, Bloxonend Flooring Co., Kansas, Mo., represented on Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

FLOORS—TILE, CORK, ETC.
Mangrum & Otter, 827 Mission St., San Francisco.

FLOOR VARNISH
Bass-Hueter and San Francisco Pioneer Varnish Works, 816 Mission St., San Francisco.
Fifteen for Floors, made by W. P. Fuller & Co., San Francisco.
Standard Varnish Works, Chicago, New York and San Francisco.
R. N. Nason & Co., San Francisco and Los Angeles.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FLOORS—HARDWOOD
Oak Flooring Bureau, Ashland Block, Chicago, Ill.
Cadwallader, Gibson Co., 5th & Brannan St., San Francisco.
Parrott & Co., 320 California St., San Francisco.
Strable Hardwood Company, 511 First St., Oakland.
E. L. Bruce Co., Manufacturers, Memphis, Tenn.
White Bros., 5th and Brannan Sts., San Francisco.
J. E. Higgins Lumber Company, 123 Sixth St., San Francisco.

THE PELTON WATER WHEEL CO.
Hydraulic Engineers
Light-Duty High-Head Pumps for Tank and Other Building Service
Heavy-Duty Pumps for Municipal and General Water Supply
2022 Harrison Street San Francisco

NASON'S OPAQUE FLAT FINISH A VALUABLE OIL PAINT FOR WALLS, CEILINGS, ETC.
Made in California to stand Pacific Coast climatic conditions
R. N. Nason & Co., Paint Makers
PORTLAND 151 Potrero Ave.—SAN FRANCISCO—436 Market St. SEATTLE

ARCHITECTS' SPECIFICATION INDEX—Continued

FLOOR TREATMENT—HARDWOOD, COMPOSITION AND CONCRETE
Minwax Co., Inc., 22 Battery St., San Francisco and 653 S. Clarence St., Los Angeles.

FLOORS—MASTIC—FLOOR COVERING
Hill, Hubbell & Company, 115 Davis St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

FLUE LINING
California Brick Company, 604 Mission St., San Francisco.

FLUSH VALVES
Handy Self-Cleaning Flush Valve Co., 731 Folsom St., San Francisco.

FUEL OIL SYSTEMS
S. T. Johnson Co., 1337 Mission St., San Francisco.
S. F. Bowser & Co. Inc., 612 Howard St., San Francisco.
Wayne Tank and Oil Co., 430 Fourth St., San Francisco.

FURNACES—WARM AIR
Mangrum & Otter, 827 Mission St., San Francisco.
Montague Range and Furnace Co., 826 Mission St., San Francisco.
C. B. Babcock Company, 768 Mission St., San Francisco.

FURNITURE—OFFICE, SCHOOL, CHURCH,
Home Manufacturing Company, 543 Brannan St., San Francisco.
C. F. Weber & Co., Second and Mission Sts., San Francisco.
W. & J. Sloane, 216 Sutter St., San Francisco.
Western States Seating Co., 39 Second St., San Francisco.
H. Rumph, 567 Howard St., San Francisco.
Fink & Schindler Company, 218-19th St., San Francisco.

FURRING TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

GARAGE HARDWARE
The Stanley Worka, New Britain, Conn., Coast sale offices, San Francisco, Los Angeles and Seattle, Wash.
Richards-Wilcox Mfg. Co., 525 Market St., San Francisco.

GARDEN FURNITURE
Art Stone Distributing Company, 2-4 Valencia St., at Market, San Francisco.

GAS HEATING
Pittsburg Water Heater Company, 478 Sutter St., San Francisco.
Ruud Automatic Water Heater, sold by Ruud Heater Company, 431 Sutter St., San Francisco.
C. B. Babcock Company, representing General Gas Light Company, 768 Mission St., San Francisco.

GLASS
American Window Glass Co., represented by L. H. Butcher Co., 862 Mission St., San Francisco.
Cobbledick-Kibbe Glass Co., 666 Howard St., San Francisco.
Fuller & Goepp, 32 Page St., San Francisco, and Jackson, at Eleventh St., Oakland.
W. P. Fuller & Company, all principal Coast cities.

GRADING, WRECKING, ETC.
Dolan Wrecking & Construction Co., 1607 Market St., San Francisco.

GRANITE
Raymond Granite Co., Potrero Ave., and Division St., San Francisco.

GRAVEL AND SAND
Coast Rock & Gravel Co., Call-Post Bldg., San Francisco.
Del Monte White Sand, sold by Del Monte Properties Co., Crocker Bldg., San Francisco.

GYMNASIUM EQUIPMENT—LOCKERS, ETC.
Ellery Arms Co., 583 Market St., San Francisco.

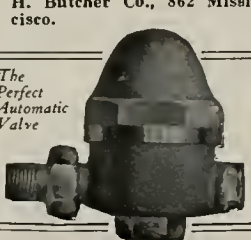
HARDWALL PLASTER
"Empire," manufactured by Pacific Portland Cement Co., Pacific Building, San Francisco; Portland, San Jose and Los Angeles.

HARDWARE
Joost Bros., agents for Russell & Erwin Hardware, 1053 Market St., San Francisco.
The Stanley Works, New Britain, Conn.; Coast sales offices, San Francisco, Los Angeles, and Seattle, Wash.
Corbin hardware, sold by Palace Hardware Co., 581 Market St., San Francisco.
Vonnegut hardware, sold by Abeel-Jensen Co. Call Bldg., San Francisco.
Richards-Wilcox Mfg. Co., Aurora, Ill.; Ewing-Lewis Co., 626 Underwood Building, San Francisco.

HARDWOODS
White Brothers, 5th and Brannan Streets, San Francisco.

HEATING AND VENTILATING CONTRACTORS
Atlas Heating and Ventilating Company, Inc., Fourth and Freelon Sts., San Francisco.
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St., San Francisco.
Hateley & Hateley, Mitau Bldg., Sacramento.
Mangrum & Otter, 827-831 Mission St., San Francisco.
Lawson & Drucker, 450 Hayes St., San Francisco.
Carl T. Doell, 467 21st St., Oakland.
Lupen and Hawley, 906 7th St., Sacramento.
William F. Wilson Co., 328 Mason St., San Francisco.
W. H. Picard, 5656 College Ave., Oakland.
Pacific Fire Extinguisher Co., 424 Howard St., San Francisco.
Scott Company, 243 Minna St., San Francisco.
H. G. Newman Co., 2004 Telegraph Ave., Oakland.

HEATING & VENTILATING EQUIPMENT
W. S. Haines & Co.'s steam specialties. O. M. Simmons Company, 115 Mission St., San Francisco.



W. S. Haines & Co., Steam Specialties, Vacuum and Vapor Systems of Heating
"Twenty-four years of satisfactory service."
(See Page 1503 of Sweet's Catalogue)
O. M. SIMMONS CO. 115 Mission St., San Francisco Phone: Douglas 5497

Clarence E. Musto, Pres. Joseph B. Keenan, Vice-Pres. Guido J. Musto, Sec'y & Treas.

JOSEPH MUSTO SONS--KEENAN CO.

Phone Franklin —6365— MARBLE Office and Mills: 535-565 North Point St., SAN FRANCISCO. CAL.

ARCHITECTS' SPECIFICATION INDEX—Continued

Hulting, Hurst & Hulting, representing Jas. P. Marsh Co., Monadnock Bldg., San Francisco.
Illinois Engineering Co., 417 Market St., San Francisco.
Williams Radiator Company, 571 Mission St., San Francisco.

HEATERS, GAS GRATES, RADIATORS, ETC.
General Gas Light Company, 768 Mission St., San Francisco.
Ra-Do Fumeless Gas Radiators, Potter Radiator Corporation, 478 Sutter St., San Francisco
Humphrey Radiantfire, sold by Rudd Heater Company, 431 Sutter St., San Francisco.
Williams Radiator Company, "Gas Steam Radiators," 571 Mission St., San Francisco.
McLaughlin Metal Works, 223 J St., Sacramento.

HOLLOW BUILDING TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

HOLLOW TILE BLOCKS
Cannon & Co., plant at Sacramento; 77 O'Farrell St., San Francisco.
California Brick Company, 604 Mission St., San Francisco.
Gladding, McBean & Co., San Francisco, Los Angeles, Oakland and Sacramento.

HOSE—UNDERWRITERS UNLINED LINEN—RUBBER
Plant Rubber & Asbestos Works, 537-539 Brannan Street, San Francisco.

HOSPITAL FIXTURES
Mott Company of California, 553 Mission St., San Francisco.

HOSPITAL SIGNAL SYSTEMS
Chicago Signal Co., represented by Garnett Young & Co., 612 Howard St., San Francisco.

ICE MAKING MACHINERY
Cyclops Iron Works, 837 Folsom St., San Francisco.
"Frigedaire," Sold by W. L. Cochran, 880 Mission St., San Francisco.

INCINERATORS
The Incinerite, sold by M. E. Hammond, Mezzanine, Pacific Building, San Franrisco.

INDUSTRIAL LIGHTING EQUIPMENT
Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

INGOT IRON
"Armco" brand, manufactured by American Rolling Mill Company, Middletown, Ohio, and 10th and Bryant Sts., San Francisco.

INSPECTIONS AND TESTS
Robert W. Hunt & Co., 251 Kearny St., San Francisco.

INSULATION
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

JAIL EQUIPMENT
Ralston Iron Works, 20th and Indiana Sts., San Francisco.

LAMP POSTS, ELECTROLIERS, ETC.
J. L. Mott Iron Works, 553 Mission St., San Francisco.

LANDSCAPE ARCHITECT
Emerson Knight, 704 Market St., San Francisco.
Cotton & Co., Call Building, San Francisco.

LANDSCAPE GARDENERS
MacRorie-McLaren Co., 514-516 Phelan Bldg., San Francisco.

LATHING AND PLASTERING
MacGruer & Simpson, 226 Tehama St., San Francisco.
A. Knowles, Call-Post Bldg., San Francisco.

LATHING MATERIAL—WIRE, METAL, ETC.
Buttonlath Manufacturing Co., Los Angeles and 207 Balboa Bldg., San Francisco.
Pacific Materials Co., 525 Market St., San Francisco.
The General Fireproofing Company, 20 Beale Street, San Francisco
Truscon Steel Co., 709 Mission Street, San Francisco.
Wickwire Spencer Steel Corporation, 144 Townsend St., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

LIGHT, HEAT AND POWER
Great Western Power Company, Stockton St., near Sutter, San Francisco.
Pacific Gas & Electric Co., Sutter St., San Francisco.

LIGHTING FIXTURES
Benjamin Electric Mfg. Co., New York, Chicago, 580 Howard St., San Francisco.
D. Dicrssen Co., 20 Second Street, San Francisco. Distributors Solar-Lite fixtures.
Roberts Mfg. Co., 663 Mission St., San Francisco.
Harvey Hubbell, Inc., Bridgeport, Conn., represented in San Francisco by Garnett Young & Co., 612 Howard St., San Francisco.

LIMESTONE, INDIANA
Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana.

LINOLEUM
D. N. & E. Walter & Co., 562 Mission St., San Francisco.
The Paraffine Companies, factory in Oakland; office, 34 First St., near Market, San Francisco.
W. & J. Sloane, 216 Sutter St., San Francisco.
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.
Bonded Floors Company, 370 Second St., San Francisco; 263 So. Los Angeles St., Los Angeles.

LINOTILE
Van Fleet-Freear Company, 557 Howard St., San Francisco, and 420 S. Spring St., Los Angeles.

LUMBER
Hart-Wood Lumber Co., Fifth and Berry Sts., San Francisco.
Pacific Manufacturing Company, San Francisco, Oakland, Los Angeles and Santa Clara.
Pope & Talbot, foot of Third St., San Francisco.

RAY COOK MARBLE CO.
IMPORTED AND DOMESTIC MARBLES
For Building Construction
Factory and Office, foot of Powell St., Oakland Phone Piedmont 1009

Cotton & Company
LANDSCAPE ARCHITECTS AND ENGINEERS
74 NEW MONTGOMERY STREET, SAN FRANCISCO
Telephone Douglas 5541

ARCHITECTS' SPECIFICATION INDEX—Continued

Santa Fe Lumber Co., 16 California St., San Francisco.
J. E. Higgins Lumber Company, 423 Sixth St., San Francisco.
Sunset Lumber Company, First and Oak Sts., Oakland.
White Bros., 5th and Brannan Sts., San Francisco.

MANTELS—WOOD, TILE, ETC.
Mangrum & Otter, 827-831 Mission St., San Francisco.

MARBLE
American Marble and Mosaic Co., 25 Columbus Square, San Francisco.
Ray Cook Marble Company, foot of Powell St., Oakland.
Joseph Musto Sons, Keenan Co., 535 N. Point St., San Francisco.
Vermont Marble Co., Coast branches, San Francisco, Portland and Tacoma.
Tompkins-Kiel Marble Company, 505 Fifth Ave., New York; also Chicago, Philadelphia and San Francisco.
Columbia Marble Co., 413 Rialto Bldg., San Francisco.

METAL DOORS AND WINDOWS
Waterhouse-Wilcox Co., Inc., 523 Market St., San Francisco.
U. S. Metal Products Co., 330 Tenth St., San Francisco.

METAL FURNITURE
Forderer Cornice Works, 269 Potrero Ave., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

METAL STORE FRONTS
Cobbledick-Kibbe Glass Company, 666-8 Howard street, San Francisco, and Washington at Third St., Oakland.

MILL WORK
Pacific Manufacturing Company, San Francisco, Los Angeles, Oakland and Santa Clara.
National Mill and Lumber Co., San Francisco and Oakland.
Lannom Bros. Mfg. Co., 5th and Magnolia Sts., Oakland.
The Fink & Schindler Company, 218-13th St., San Francisco.

OIL BURNERS
Bunting Iron Works, 1215 First Nat. Bank Bldg., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
G. E. Witt Co., 862 Howard St., San Francisco.
W. S. Ray Mfg. Company, Rialto Bldg., San Francisco, and 2206 San Pablo Ave., Oakland.
Rotary Oil Burner Company, 159 Twelfth St., Oakland.

OIL STORAGE AND DISTRIBUTING STATIONS
S. F. Bowser & Co., Inc., 612 Howard St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
Wayne Oil Tank & Pump Co., 430 Fourth St., San Francisco; 830 S. Los Angeles St., Los Angeles.

ORNAMENTAL IRON AND BRONZE
California Artistic Metal and Wire Co., 349 Seventh St., San Francisco.
Federal Ornamental Iron and Bronze Co., 16th St., and San Bruno Ave., San Francisco.
Michel & Pfeffer Iron Works, 1415 Harrison St., San Francisco.
Palm Iron & Bridge Works, Sacramento.
C. J. Hillard Company, Inc., 19th and Minnesota Sts., San Francisco.
Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.

PANIC DOORS
Vonnegut hardware, sold by Abeel-Jensen Co. Call Bldg., San Francisco.

PAINT FOR CEMENT AND STUCCO
Wadsworth, Howland & Co., Inc., Jas. Hambly & Son, 1333 E. 7th St., Los Angeles, and 229 Clay St., San Francisco.

PAINT FOR STEEL STRUCTURES, BRIDGES, ETC.
The Paraffine Companies, Inc., 34 First St., San Francisco.
Premier Graphite Paint and Pioneer Brand Red Lead, made by W. P. Fuller & Co., San Francisco.
Hill, Hubbell & Company, 115 Davis St., San Francisco.

PAINTING, TINTING, ETC.
I. R. Kissel, 1747 Sacramento St., San Francisco.
D. Zelinsky & Sons, San Francisco and Los Angeles.
The Tormey Co., 681 Geary St., San Francisco.
A. Quandt & Son, 374 Guerrero St., San Francisco.
Artistic Painting Company, 39 Tehama St., San Francisco.

PAINTS, OILS, ETC.
Magner Bros., 414-424 Ninth St., San Francisco.
Bass-Hueter Paint Co., Mission, near Fourth St., San Francisco and all principal Coast cities.
R. N. Nason & Company, San Francisco, Los Angeles, Portland and Seattle.
W. P. Fuller & Co., all principal Coast cities.
Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
Fire Retardent Products Co., 2838 Hannah St., Oakland, Cal.
Oakley Paint Manufacturing Company, 727 Antonia St., Los Angeles, and Hearst Building, San Francisco.

PARTITIONS—FOLDING AND ROLLING
J. G. Wilson Corporation, 621 N. Broadway, Los Angeles; Waterhouse-Wilcox Co., Underwood Bldg., San Farncisco.

PARTITION TILE (Burned Clay)
California Brick Company, 604 Mission St., San Francisco.

SILENT CALL **Chicago HOSPITAL** SIGNAL SYSTEMS
GARNETT YOUNG AND COMPANY
Pacific Coast Sales Engineers
612 Howard St., San Francisco
Seattle Los Angeles Portland

Von Duprin

Self-Releasing Fire Exit Latches

Excess Safety

Von Duprin Self-Releasing Fire Exit latches are made better than might seem necessary.

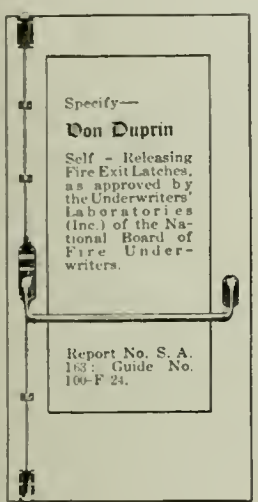
All parts are made with a factor of safety far beyond that demanded by the work they are to do.

The materials are the best we can buy.

The finish is in keeping with that of the finest buildings.

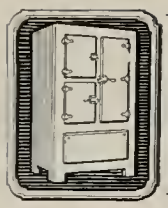
All this is done because we believe that this excess quality adds more in value than in cost—and because we know that nothing less than the best is good enough where the protection of human life is at stake.

Complete details in "Sweet's," pages 1415-1419, or ask us for Catalog 12-L.


Specify—
Von Duprin
Self - Releasing Fire Exit Latches, as approved by the Underwriters' Laboratories (Inc.) of the National Board of Fire Underwriters.
Report No. S. A. 163; Guide No. 100-F 24.

VONNEGUT HARDWARE CO.
Indianapolis, Ind.

ant for Fulton Bag Co., Minneapolis.
Kees & Colburn, Architects



Frigidaire

The Electric Refrigerator for Home, Apartment, Store, Etc.

Made By DELCO-LIGHT COMPANY, Dayton, Ohio
W. L. COCHRAN, INC., Distributor, 880 Mission St., San Francisco

ARCHITECTS' SPECIFICATION INDEX—Continued

PLASTERING CONTRACTORS
A. Knowles, Call Bldg., San Francisco.
MacGruer & Simpson, 266 Tehama St., San Francisco.

PLASTER REINFORCEMENT
National Steel Fabric Co., A. C. Rulofson Co., Pacific Coast Sales Manager, Monadnock Building, San Francisco.

PLUMBING CONTRACTORS
Alex Coleman, 706 Ellis St., San Francisco.
Gilley-Schmid Company, 198 Otis St., San Francisco.
Hateley & Hateley, Mitau Bldg., Sacramento.
Scott Co., Inc., 243 Minna St., San Francisco.
Wm. F. Wilson Co., 328 Mason St., San Francisco.
Luppen & Hawley, 906 7th St., Sacramento.
W. H. Picard, 5656 College Ave., Oakland.
H. G. Newman Company, 2004 Telegraph Ave., Oakland.

PLUMBING SUPPLY HOUSES
Crane Company, all principal coast cities.
Haines, Jones & Cadbury Co., 857 Folsom St., San Francisco.
Holbrook, Merrill & Stetson, 64 Sutter St., San Francisco.
H. Mueller Manufacturing Company, 1072-76 Howard St., San Francisco.
J. L. Mott Iron Works, D. H. Gulick, selling agent, 553 Mission St., San Francisco.
Pacific Sanitary Manufacturing Co., 67 New Montgomery St., San Francisco.
West Coast Porcelain Manufacturers, 334-335 Wells Fargo Building, 85 Second St., San Francisco.

POLES AND PILING
Santa Fe Lumber Co., 16 California St., San Francisco.

PUMPS—HAND OR POWER
Chicago Pump Co., represented by Garnett, Young & Co., 612 Howard St., San Francisco.
Simonds Machinery Co., 117 New Montgomery St., San Francisco.
Ocean Shore Iron Works, 558 Eighth St., San Francisco.
Pelton Water Wheel Co., 2022 Harrison St., San Francisco.
S. F. Bowser & Co., Inc., 612 Howard St., San Francisco.
S. T. Johnson Co., 1337 Mission St., San Francisco.
Wayne Tank & Pump Co., 430 Fourth St., San Francisco; 830 S. Los Angeles St., Los Angeles.
Byron Jackson Iron Works, 55 New Montgomery St., San Francisco.

REINFORCING STEEL
Edward L. Soule, Rialto Bldg., San Francisco.
Badt-Falk & Co., Call Bldg., San Francisco.
Judson Iron Works, San Francisco and Oakland.
Gunn, Carle & Co., Inc., 444 Market St., San Francisco.
Pacific Coast Steel Co., Rialto Bldg., San Francisco.
Truscon Steel Co., 709 Mission St., San Francisco.
United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

REFLECTORS
I. P. Frink, Inc., 77 O'Farrell St., San Francisco.
Benjamin Electric Mfg. Co., 580 Howard St., San Francisco.

REFRIGERATORS
McCray Refrigerator Company San Francisco office, 765 Mission St.
"Frigedaire," Sold by W. L. Cochran, 880 Mission St., San Francisco.

ROOFING AND ROOFING MATERIALS
"Malthoid" and "Ruberoid," also "Pabco" ten and twenty year roofs, manufactured by the Paraffine Companies, Inc., San Francisco.
United Materials Co., Sharon Bldg., San Francisco.
H. H. Robertson Co., Hobart Bldg., San Francisco.
Jones Brothers Asbestos Supply Co., 512 Second St., San Francisco.
Johns-Manville Inc., of California, 500 Post St., San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.

RUBBER TILING—INTERLOCKING
New York Belting & Packing Co., 518-19 Mission St., San Francisco.

RUGS & CARPETS
W. & J. Sloane, 216 Sutter St., San Francisco.

SAFETY TREADS
Pacific Materials Co., 525 Market St., San Francisco.

SAND
Coast Rock & Gravel Co., Call Bldg., San Francisco.
Del Monte White Sand, Del Monte Properties Co., 401 Crocker Bldg., San Francisco.

SASH AND CABLE CHAINS
Smith & Egge Mfg. Co., Bridgeport, Conn. Coast agents, Rawlins & Smith, San Francisco and Los Angeles.

SAFES AND VAULTS
Hermann Safe Company, 216 Fremont St., San Francisco.

SCALES
Toledo Scale Company, 676 Mission St., San Francisco.

SCENIC PAINTING—DROP CURTAINS, ETC.
The Edwin H. Flagg Scenic Co., Los Angeles and San Francisco.

SCHOOL AND THEATER EQUIPMENT
H. Rumpf, 567 Howard St., San Francisco.

SHEATHING AND SOUND DEADENING
Samuel Cabot Mfg. Co., Boston, Mass., agencies in San Francisco, Oakland, Los Angeles, Portland, Tacoma and Spokane.
The Paraffine Companies, Inc., 34 First St., San Francisco and principal Coast cities.

ELECTRICAL LAYOUTS AND PLANS
FOR BUILDINGS, INDUSTRIAL PLANTS, ETC.

ROBERT L. ST. JOHN

Phone Douglas 5902 1011 FLAT IRON BUILDING San Francisco, Calif.

BULL DOG FLOOR CLIPS

The use of this clip to anchor wood floors to concrete is cheap insurance against floor buckle and dry rot. Write for samples and special information.

BULL DOG FLOOR CLIP SALES CO.

77 O'Farrell St., San Francisco 600 Metropolitan Bldg., Los Angeles

L. T. KELLEY, General Manager

ARCHITECTS' SPECIFICATION INDEX—Continued

SHEET METAL WORK
- Forderer Cornice Works, 269 Potrero Ave., San Francisco.
- U. S. Metal Products Co., 330-10th St., San Francisco.
- United Alloy Steel Corporation, Canton, Ohio; Western Sales Office, Santa Fe Building, San Francisco.

SHINGLE STAINS
- Bass-Hueter Paint Company, all principal Coast cities.
- Cabot's Creosote Stains, sold by Pacific Bldg., Materials Co., 525 Market St., San Francisco.
- Fuller's Pioneer Shingle Stains, made by W. P. Fuller & Co., San Francisco.
- The Paraffine Companies, San Francisco, and principal Coast Cities.

SHUTTERS—ROLLING, FIRE, STEEL, WOOD
- J. G. Wilson Corp, 621 North Broadway, Los Angeles.

SIGNALING & PROTECTIVE SYSTEMS
- Garnett, Young & Co., 612 Howard St., San Francisco.

SINKS—COMPOSITION
- Petrium Sanitory Sink Co., Fifth and Page Sts., Berkeley.

SKYLIGHTS
- H. H. Robertson Co., represented on the Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

STEEL HEATING BOILERS
- Birchfield Boiler Company, Tacoma, Washington.
- Kewanee Boiler, factory branch, Exposition Building, San Francisco.

STEEL TANKS, PIPE, ETC.
- Ocean Shore Iron Works, 55 Eighth St., San Francisco.

STEEL TANKS
- Main Iron Works, 1000 Sixteenth St., San Francisco
- S. T. Johnson Co., 1337 Mission St., San Francisco.

STEEL AND IRON—STRUCTURAL
- Central Iron Works, 621 Florida St., San Francisco.
- Herrick Iron Works, 18th and Campbell Sts., Oakland.
- Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
- Judson Mfg. Co., 817-821 Folsom St., San Francisco.
- Mortenson Construction Co., 19th and Indiana Sts., San Francisco.
- Pacific Rolling Mills, 17th and Mississippi Sts., San Francisco.
- Palm Iron & Bridge Works, Sacramento.
- Ralston Iron Works, 20th and Indiana streets, San Francisco.
- Schrader Iron Works, Inc., 1247 Harrison St., San Francisco.
- Western Iron Works, 141 Beale St., San Francisco.

STEEL LUMBER
- The General Fireproofing Company, 20 Beale Street, San Francisco

STEEL ROLLING DOORS
- Kinnear Rolling Steel Doors, sold by Pacific Building Materials Co., Underwood Bldg., San Francisco.
- Wilson Rolling Steel Doors, the J. G. Wilson Corporation, 621 North Broadway, Los Angeles and Waterhouse Wilcox Co., 523 Market St., San Francisco.

STEEL SASH
- Bayley-Springfield solid steel sash, sold by Pacific Materials Co., 525 Market St., San Francisco.
- "Fenestra" Solid Steel Sash, manufactured by Detroit Steel Products Co., factory sales office, 251 Kearny St., San Francisco.
- Michel & Pfeffer Iron Works, 1415 Harrison street, San Francisco.
- U. S. Metal Products Company, 330 Tenth St., San Francisco.
- Truscon Steel Company, 709 Mission St., San Francisco.

STEEL TANKS
- Main Iron Works, 1000 Sixteenth Street, San Francisco.

STEP AND WALK BRICK
- California Brick Company, 604 Mission St., San Francisco.
- United Materials Co., Sharon Bldg., San Francisco.

STONE
- Indiana Limestone Quarrymen's Association, Box 770, Bedford, Indiana.

STREET LIGHTING EQUIPMENT
- Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

STUCCO, COMPOSITION
- California Stucco Co., Holbrook Building, San Francisco.
- Hoff Magnesite Co., San Francisco. Miller & Alf, 337 Monadnock Bldg., San Francisco, general agents.

STUCCO-PLASTER REINFORCEMENT
- National Steel Fabric Company, A. C. Rulofson Co., Pacific Coast Sales Managers, Monadnock Building, San Francisco.

STUDDING—FIREPROOF STEEL
- The General Fireproofing Company, 20 Beale Street, San Francisco

SWITCHES AND SWITCHBOARDS
- Drendell Electrical & Mfg. Co., 1315 Howard St., San Francisco
- Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa., and First National Bank Building, San Francisco.

TELEPHONE SYSTEMS
- "Stromberg-Carlson Telephones," Garnett Young & Company, 612 Howard St., San Francisco.

W. & J. SLOANE

216-228 SUTTER STREET
SAN FRANCISCO
Phone: GARFIELD 2838

LINOLEUMS
WINDOW SHADES
CARPETS
FURNITURE

WESIX ELECTRIC HEATING SYSTEMS
FOR HOTELS, APARTMENTS, PUBLIC BUILDINGS, RESIDENCES
W. WESLEY HICKS, Manufacturer
Rialto Building Tel. Doug. 1187 San Francisco

ARCHITECTS' SPECIFICATION INDEX—Continued

THEATER AND OPERA CHAIRS
C. F. Weber & Co., 601 Mission St., San Francisco.
Western States Seating Co., 133 Kearny St., San Francisco.

THERMOSTATS FOR HEAT REGULATION
Johnson Service, Rialto Bldg., San Francisco.

TILES FOR FLOORS, MANTELS, ROOFS
Cannon & Co., Sacramento; and 77 O'Farrell St. San Francisco.
Gladding, McBean & Co., Crocker Bldg., San Francisco.
Livermore Fire Brick Works and California Brick Company, 604 Mission St., San Francisco.
S. & S. Tile Co., 4th and Carrie Streets, San Jose.
Bonded Floors Company, 370 Second St., San Francisco; 263 So. Los Angeles, St., Los Angeles.

TRAVELING CRANES
Cyclops Iron Works, 837 Folsom St., San Francisco.

VALVES—PIPES AND FITTINGS
Crane Radiator Valves, manufactured by Crane Co., Second and Brannan Sts., San Francisco.
Grinnell Co., 453 Mission St., San Francisco.
O. M. Simmons Co., 115 Mission St., San Francisco.
H. Mueller Mfg. Co., 1072 Howard St., San Francisco.
Kennedy Valve Mfg. Co., 23-25 Minna street, San Francisco.

VALVE PACKING
N. H. Cook Belting Co., 317 Howard St., San Francisco.

VARNISHES
Bass-Hueter Paint Company, Mission, near 4th street, San Francisco, and all principal Coast cities.
W. P. Fuller Co., all principal Coast cities.
R. N. Nason & Co., San Francisco, Los Angeles, Portland and Seattle.
Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

VENEERS AND VENEERED PANELS
White Brothers, 5th and Brannan Streets, San Francisco.

VENTILATORS
H. H. Robertson Co., represented on the Pacific Coast by H. M. Holway, 1007 Hobart Building, San Francisco.

VITREOUS CHINAWARE
Pacific Sanitary Manufacturing Company, 67 New Montgomery St., San Francisco.
West Coast Porcelain Manufacturers, Wells Fargo Building, San Francisco.

WATERPROOFING (See Damproofing)
Medusa Waterproofing, manufactured by Sandusky Cement Co., Cleveland, Ohio. Carried in stock and sold by leading building supply dealers in California, Oregon and Washingt
The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.

WALL BEDS—SEATS, ETC. (See Beds)

WALL BOARD
"Amiwud" and "Pabco," manufactured by The Paraffine Companies, Inc., San Francisco, Los Angeles, Portland and Seattle.
"Campo-Board," White Brothers, distributors, 5th and Brannan Streets, San Francisco.
Western Asbestos Magnesia Company, 25 South Park, San Francisco.

WALL PAINT
Nason's Opaque Flat Finish, manufactured by R. N. Nason & Co., San Francisco, Portland and Los Angeles.

WALL PAPER AND DRAPERIES
The Tormey Co., 681 Geary St., San Francisco.
W. & J. Sloane, 216-228 Sutter St., San Francisco.

WARDROBES, SCHOOL
W. L. Evans, 700 Block B., Washington, Indiana
James G. Wilson Corporation, 11 East 36th St., New York and Los Angeles.

WATER SUPPLY SYSTEMS
Kewanee Water Supply System—Simonds Machinery Co., agents, 117 New Montgomery St., San Francisco.

WHEELBARROWS—STEEL
Western Iron Works, Beale and Main Sts., San Francisco.

WHITE ENAMEL
"Gold Seal," manufactured and sold by Bass-Hueter Paint Co. All principal Coast cities.
"Silkenwhite," made by W. P. Fuller & Co., San Francisco.
"Satinette," Standard Varnish Works, 55 Stevenson St., San Francisco.
The Paraffine Companies, Inc., 34 First St., San Francisco. Los Angeles, Portland and Seattle.

WINDOW SHADES
W. & J. Sloane, 216 Sutter street, San Francisco.
D. N. & E. Walter, 562 Mission street, San Francisco.

WINDOW SASH CHAIN
The Smith & Egge Mfg. Co., Bridgeport, Conn. Coast agents, Rawlins & Smith, 604 Mission St., San Francisco, and 618 American Bank Building, 2nd and Spring Sts., Los Angeles.

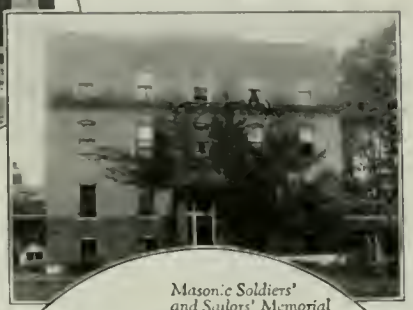
WINDOWS, REVERSIBLE, CASEMENT, ETC.
Hauser Window Co., 1362 Harrison St., San Francisco.
J. G. Wilson Corporation, 621 N. Broadway, Los Angeles; Waterhouse-Wilcox Co., Underwood Bldg., San Francisco.
Critall Casement Window Company, Detroit; Waterhouse-Wilcox Company, agents, 523 Market St., San Francisco.
Universal Sales Co., 1916 Broadway, Oakland; San Francisco, Los Angeles and Portland.

WIRE, ELECTRICAL
Garnett Young & Company, 612 Howard St. San Francisco.

WIRE FENCE
Standard Fence Co., 245 Market street, San Francisco; and 310 12th street, Oakland.

GLOBE AUTOMATIC SPRINKLERS
Will protect your building and business from destruction by fire and reduce your Insurance Rate. Write for estimates.
Pacific Fire Extinguisher Company
FIRE PROTECTION ENGINEERS
424-440 Howard Street, San Francisco Manufacturing Plant, 298 Fremont St.

OAK FLOORS are today giving satisfactory service in the Presbyterian Home for the Aged, Evanston, Ill., shown at left, in the Nurses' Home, Robinwood Hospital, Toledo, Ohio, shown next below, and in the Masonic Memorial Hospital Utica, N. Y.



In Hospitals—

Modern Oak Floors are Sanitary, Permanent, Beautiful

Cleanliness—

Oak floors are sanitary. The polished surface is easily cleaned, and the floor kept bright and fresh with least time and effort—a factor to be considered in cost of up-keep.

Durability—

Oak floors never deteriorate. Only the finish is subject to daily wear, and is quickly renewed, when necessary, by varnishing. Oak flooring stands the test of time, and is today giving full service in schools, factories and similar buildings, as well as hospitals, after hard and long continued use.

Beauty—

The patient's recovery is influenced by little things, such as comfort and "hominess" in surroundings. Oak floors suggest home and bring relief into the sick room. In nurses' quarters, also, and in homes for the aged, oak floors are appreciated for the friendly atmosphere they impart.

The advantages of oak floors are fully brought out in literature available for architects' reference files, which will be sent you on request.

OAK FLOORING BUREAU
1036 Ashland Block, Chicago

Masonic Soldiers' and Sailors' Memorial Hospital, Utica, N. Y.

OAK FLOORS

NATURE'S GIFT OF EVERLASTING BEAUTY

SEE OUR CATALOGUE IN SWEETS

See page 481—17th edition

CONSULT AN ARCHITECT BEFORE BUILDING

Put your flooring problems up to our experienced experts. We will gladly serve you

MODERN HEATING SERVICE

A steam or hot water heating system with a boiler burning gas fuel is one of the most satisfying methods of heating known today. They are convenient, dependable and healthful heating equipment for the home. The element of fire hazard is minimized, thereby insuring safety.

With such a gas fired heating system, the home may be automatically maintained at a uniform temperature. You control the time interval and degree of heat by merely setting the thermostatic regulator.

Heating systems using gas fuel are so flexible and economical in operation that they are adapted to any style of home or building.

Our gas heating specialists have some interesting data on such installations.

PACIFIC GAS AND ELECTRIC COMPANY

P·G·and E·

"PACIFIC SERVICE"

293-1223

Nonpareil Corkboard Insulation

for Cold Storage Rooms

ESTIMATES FURNISHED FOR
COMPLETE ERECTION

VAN FLEET FREEAR COMPANY

557 HOWARD STREET
SAN FRANCISCO

1231 BROADWAY
FRESNO

Farmers and Merchants National Bank
Los Angeles, Cal.

LIGHT WITH DAYLIGHT

THE old and peculiar custom of shutting out all daylight with opaque window shades is fast disappearing. Today, window area is being utilized to maximum lighting advantage because daylight when properly controlled and diffused is the most desirable and restful working light.

Instantly and Easily Adjusted to Regulate Light and Ventilation

WESTERN VENETIAN BLINDS have fulfilled the need of a modern window equipment to accomplish scientific regulation and distribution of daylight. They utilize 100% window area for lighting purposes, yet eliminate all glare. In addition, they present a handsome appearance and enhance the beauty of interior and exterior.

Write for Special Bank and Office Building Catalogs

Sweets Catalogue

Pages 1081 to 1085 Inclusive 17th Edition

WESTERN BLIND & SCREEN CO.

Factory and General Offices, Los Angeles, Cal.

New York, N. Y., 103 Park Ave. Kansas City, Mo., Mutual Bldg. Texas Agents
Chicago, Ill., 126 W. Madison St. Portland, Ore., 218 Fitzpatrick Bldg. Two Republics Sales Service,
Atlanta, Ga., 809 Flatiron Bldg. San Francisco, Cal., 923 Hearst Bldg. 524 Hicks Bldg., San Antonio

Western Venetian Blinds

MORE LIGHT~MORE AIR~LESS GLARE

E. B. Noble, President
A. E. Wilkins, Vice-Pres.

Beam, Angle, Channels, and Universal Mill Plates for immediate shipment from stock

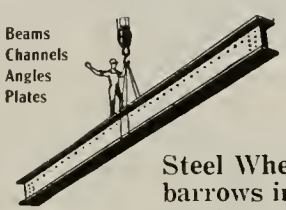
Pacific Rolling Mill Co.

SUPPLIERS OF

FABRICATED STRUCTURAL STEEL, Forgings
Bolts, Rivets, Frogs, Switches, Cast Iron Castings

General Office and Worka
17th and MISSISSIPPI STS., SAN FRANCISCO
Telephone Market 215

W. B. MORRIS, Pres. H. H. MORRIS, V.-P. L. J. GATES, Sec.



Steel Wheelbarrows in Stock

Western Iron Works

STRUCTURAL IRON AND STEEL CONTRACTORS

141-147 Beale St. and 132-148 Main St. SAN FRANCISCO
Phones: GARFIELD 2575—2576

Bliss & Faville, Architects

Steel Frame, California State Building, Civic Center, San Francisco.

FABRICATED BY

THE PALM IRON AND BRIDGE WORKS (Incorporated)

15th and R Streets, Sacramento

WESTERN ASBESTOS MAGNESIA CO.

INSULATING ENGINEERS AND CONTRACTORS

CELOTEX
INSULATING LUMBER

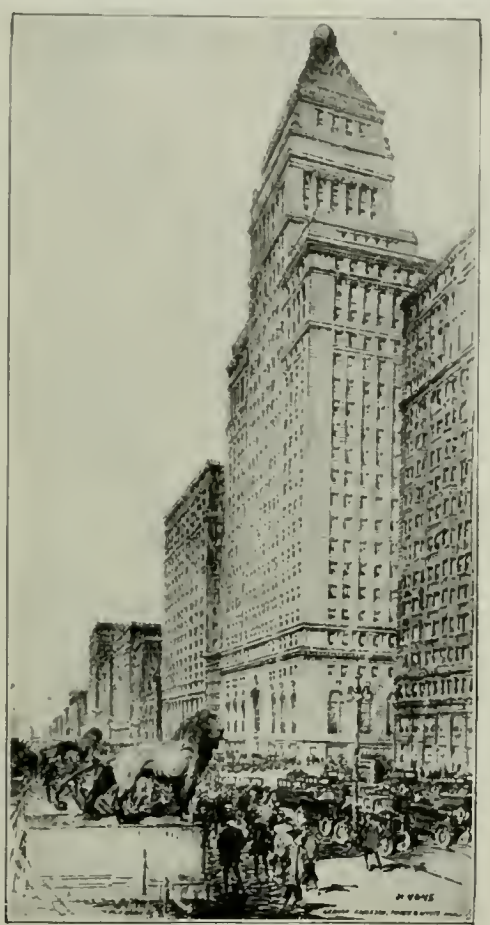
PLASTER BASE
INSULATOR
SOUND DEADENER
ACOUSTIC CORRECTOR

Asbestos and Asphalt Slate Shingles and Roofings
Asbestos and Composition Roofings—Roof Coatings
Magnesia and Asbestos Pipe and Boiler Coverings
Cold Storage Insulation—Sectional Expansion Paving Joint
"Linofelt" Sound Deadener—Wall Board
Cork Pipe Covering, Board and Granulated Cork

21-29 South Park
Bet. 2nd and 3rd Sts.

San Francisco, Cal.

Telephone Douglas 3860



The 32-story Straus Building, Chicago. Graham, Anderson, Probst & White, Architects

INDIANA LIMESTONE
The NATION'S BUILDING STONE

Our handsomely illustrated booklet on bank building will be sent free upon request.

Another Progressive Step in Building the Nation Securely

Convincing proof of the merit of Indiana Limestone lies in the fact that S. W. Straus & Co., who have had forty-one years' experience in financing building construction, have selected it for their new business home in Chicago.

Indiana Limestone Quarrymen's Ass'n, Box 770, Bedford, Ind.

Service Bureaus in New York and Chicago

Steam Heating and Ventilating

For Commercial and Public Buildings

Furnace Heating for the Home

Mangrum & Otter, Inc.

827-831 Mission Street San Francisco, Cal.

Phone Kearny 3155

FOR PERFECT ILLUMINATION

Specify **Solar Lighting Fixtures**

The most efficient commercial lighting unit on the market for diffusion and quality of light. A wide range of types from plain commercial to ornamental strap iron designs are carried in stock.

Write for Booklet Showing Complete Line

D. DIERSSEN COMPANY

20 Second Street San Francisco

SAFETY RELIABILITY ECONOMY

The three dominant factors in specifying elevators

Pacific Elevators are always safe, and the many installations is proof of their reliability. Alternating current driven elevators are fully as satisfactory as direct current driven machines for high-speed installations, and the cost of power and upkeep is much lower.

Estimates Cheerfully Given

Pacific Elevator & Equipment Company

1129-31 HOWARD STREET SAN FRANCISCO, CALIF.

MANUFACTURERS OF A. C. & D. C. ELEVATORS—PASSENGER OR FREIGHT

Fenestra

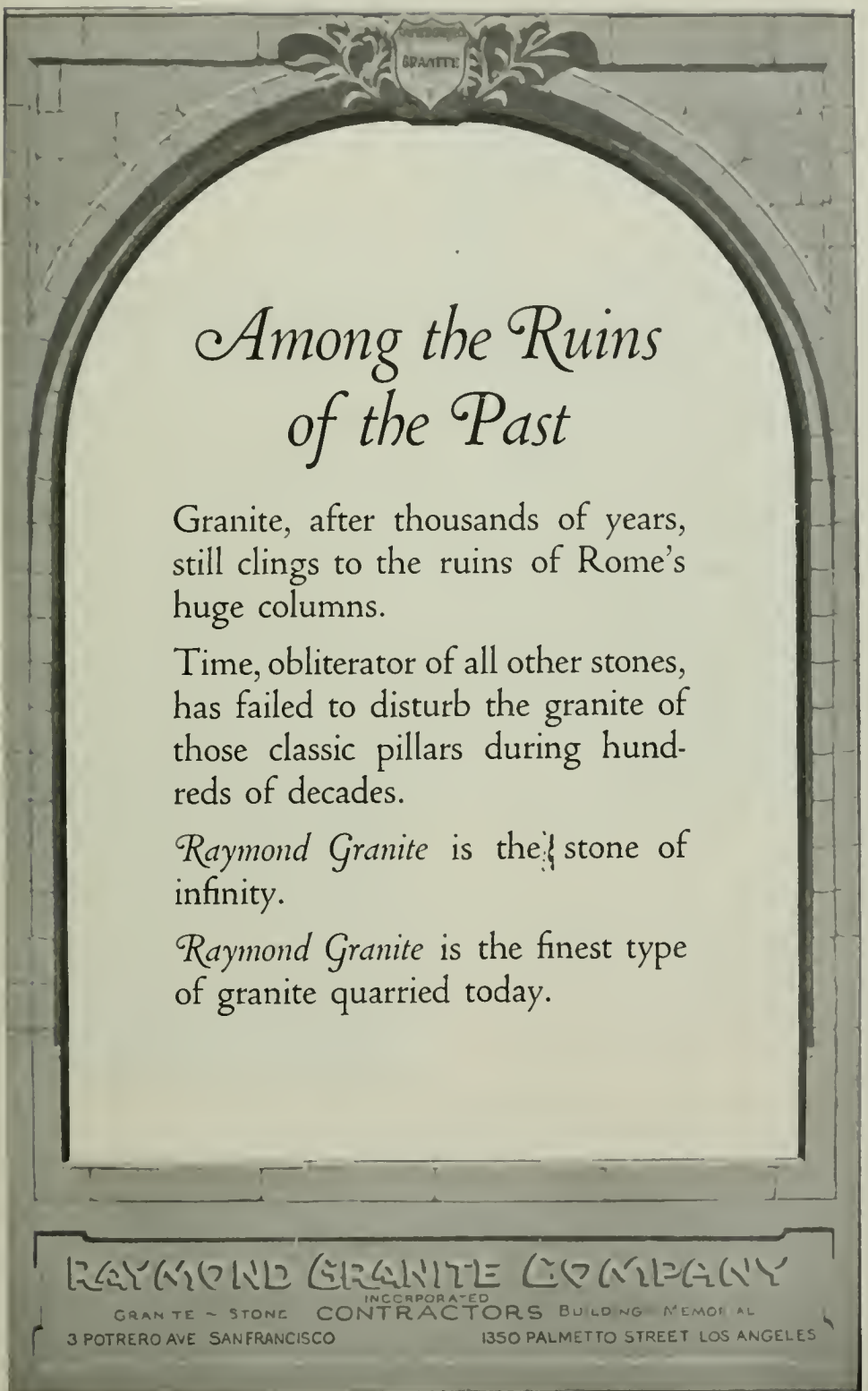
SOLID STEEL WINDOWS

DETROIT STEEL PRODUCTS CO., Detroit

251 Kearny Street, San Francisco Phone Sutter 1250

Pacific Coast Branch Factory at Emeryville

When writing to Advertisers please mention this magazine.



Among the Ruins of the Past

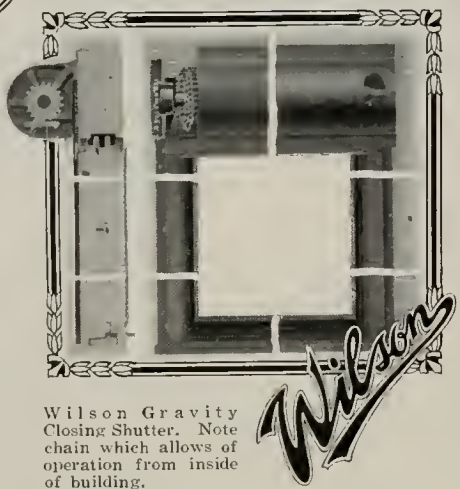
Granite, after thousands of years, still clings to the ruins of Rome's huge columns.

Time, obliterator of all other stones, has failed to disturb the granite of those classic pillars during hundreds of decades.

Raymond Granite is the stone of infinity.

Raymond Granite is the finest type of granite quarried today.

RAYMOND GRANITE COMPANY
INCORPORATED
GRANITE ~ STONE CONTRACTORS BUILDING MEMORIAL
3 POTRERO AVE SAN FRANCISCO 1350 PALMETTO STREET LOS ANGELES



Wilson Gravity Closing Shutter. Note chain which allows of operation from inside of building.

Protection Against Fire from Adjoining Buildings

IF YOURS is a problem that has to contend with fire in adjacent buildings, we recommend for your consideration our gravity closing shutter. It is entirely self closing either through the fusing, at approximately 160 degrees, of a link on the outside of the building, or it can be closed by hand from inside the building by merely unhooking a chain which holds the automatic device in check. In either event the closing is automatic and positive. After closing, new link can be inserted and the shutter reset from inside of the building.

Send for our new Catalog No. 1 which fully describes the entire line of Wilson Steel Doors and Shutters.

The J. G. WILSON Corp.
621 N. Broadway, Los Angeles, Cal.
11 East 36th Street, New York City
Offices in All Principal Cities

Established 1876
Wilson
DOORS - PARTITIONS - BLINDS
WARDROBES
THE J.G.WILSON CORPORATION
NEW YORK CITY

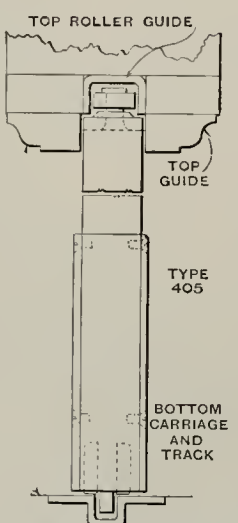
McCABE HANGERS

for

Accordion Doors

and

Folding Partitions



Arrange the partitions as you may desire and we can furnish the hangers to operate them.

Write for our set of details No. 4C.

THE McCABE HANGER MFG. CO.

W. H. Steel, Agt.
Los Angeles

425 W. 25th St.
New York

Ques.: How are Industrial Steel Sash cleaned?

Ans.: By using "Metprodco Industrial Casements"

"*Metprodco Industrial Casements*" are designed for frequent cleaning, as the ventilators are placed in position that make it possible to readily reach the entire exterior glass surface.

"PACIFIC COAST PRODUCTS"

Our Engineering Department is at your service for further information

UNITED STATES METAL PRODUCTS CO.

330 Tenth St., San Francisco, Calif.
Lumber Exchange, Seattle, Wash.
Exchange Bldg., Portland, Ore.
Bank of Italy Bldg., Los Angeles, Calif.
Paulsen Bldg., Spokane, Wash.
Provident Bldg., Tacoma, Wash.

FULLER
FLOOR PRESERVATIVE

Unexcelled for Showroom, Warehouse or Factory Floors

Fuller Floor Preservative is recommended for use as a dressing on floors of concrete, wood, magnesite, and linoleum, and is therefore particularly useful in warehouses, factories, showrooms, offices and stores.

It toughens and preserves the flooring to which it is applied, making it proof against water, oil or grease, and floors treated with it will not stain or collect dust as is the case when mineral oil dressings are used.

The use of Fuller Floor Preservative safeguards health. It prevents floors from powdering and therefore eliminates dust. Such floors can be washed and kept spotlessly clean.

On account of it being very pale, it can be used on linoleum or natural wood floors of light shades with splendid result.

W. P. FULLER & CO.

301 MISSION ST. SAN FRANCISCO

FULLER

PAINTS Since 49 VARNISHES

GLASS

Fuller & Goepp

Manufacturers of

Art and Leaded Glass
MIRRORS

Sani ONYX

A PURE WHITE GLASS

Better than Marble
for Construction Purposes

32 Page Street, San Francisco
Market 498

Jackson at 11th, Oakland
Lakeside 7272

OUR OAKLAND PLANT

KINNEAR
ROLLING · DOORS

Protection Plus

The best possible protection against fire, theft and the elements will be found in Kinnear Steel Rolling Doors and they give life time service noted for perfect balance, ease of operation and quick repair without dismantling in case of damage—ideal for every class of buildings
Our Engineering Department at your service for full information.

THE KINNEAR MANUFACTURING COMPANY
661-671 Field Ave., Columbus, Ohio
525 Market Street,
San Francisco

Oregon-Washington Railroad Freight Depot

Bar None

On big jobs or little, rush jobs or not, we don't play second fiddle to anybody in fabricating and installing STEEL BARS.

Gunn, Carle & Co.

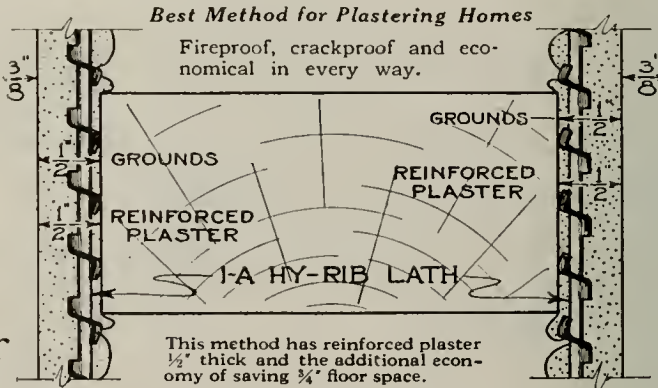
444 Market St., San Francisco

Phone Sutter 2720

Make the home fireproof

Best Method for Plastering Homes

Fireproof, crackproof and economical in every way.



This method has reinforced plaster ½" thick and the additional economy of saving ¾" floor space.

Specify TRUSCON 1-A METAL LATH with ½" grounds which is available at a cost comparable with Wood Lath.

Ask us for detailed information

TRUSCON STEEL COMPANY

Chas. Halloway, Branch Manager

709 MISSION ST. Phone Douglas 7135 SAN FRANCISCO

ALEXANDER BUILDING, SAN FRANCISCO, LEWIS P. HOBART, ARCHITECT

ARMCO-INGOT
Herringbone
RIGID METAL LATH
The General Fireproofing Co.
20 BEALE STREET, SAN FRANCISCO

Not a substitute for Anything!

But a vast improvement over lath and plaster for lining walls and ceilings

Manufactured by
NATIONAL MILL & LUMBER CO.
318 Market St. San Francisco

Pacific Five-Ply Board is really lath and plaster in the proper proportions and in convenient form. It is a wood core encased in a fireproof, moisture proof mineral cement, stronger than the best concrete.

By actual tests Pacific Five-Ply Board is far superior to either pulp wall board or plaster board in tensible strength, deflection and resistance to puncture. Will not contract or expand, bulge, warp, crack or crumble; is air tight and fire resistant.

Pacific Five-Ply Board is sawed and worked just as you would handle lumber. It comes in sheets 4 feet wide and in lengths from 6 to 16 feet. It is strong, durable, attractive in appearance, easily installed, sanitary, and economical. Send for descriptive literature.

GOODS OF HM&S QUALITY

This TRADE MARK means much to the conscientious Architect and Builder

It means a satisfied client

High-Grade Plumbing Fixtures

Holbrook, Merrill & Stetson

64 SUTTER STREET
SAN FRANCISCO

Fifth Church of Christ Scientist, Hollywood, California. Outer walls protected with Bass-Hueter Concrete Wall Coating. Frank Meline, Builder and Architect.

Weather Protection
for Cement and Stucco

In spite of the beauty of the stucco structure, many architects and builders do not favor this type of construction as its porous surface so readily absorbs moisture. Bass-Hueter chemists have (to a great extent) solved this problem in Concrete Wall Coating. This paint not only seals the pores of the walls against moisture but beautifies them through offering color combinations that are possible only with paint.

We have a very interesting chart showing the various colors of Concrete Wall Coating. It also contains valuable information on the preparation of cement, concrete and stucco surfaces before painting. A copy will be mailed you upon request.

BASS-HUETER PAINT CO.

PASADENA
HOLLYWOOD
SANTA ANA
LONG BEACH
BUENOS AIRES, R. A.

BASS-HUETER PAINTS

SAN FRANCISCO
LOS ANGELES
SEATTLE

PORTLAND
OAKLAND
TACOMA
FRESNO
HONOLULU, T. H.

Specify **HANDY FLUSH VALVES**

It is NON-CLOGGING

It functions perfectly with any make or kind of bowl.
Gives perfect cleansing flush — washes bowl clean.

Model A—Indirect Flush: For residences served by one-half inch supply pipe.

Model B — Direct Flush: For hotels, office and other buildings served with three-quarter inch or larger supply pipe.

Write for complete catalogue.

HANDY SELF-CLEANING FLUSH VALVE CO.

731 FOLSOM STREET, SAN FRANCISCO, CAL.

Demonstration in Universal Exhibits Monadnock Bldg., San Francisco

ALL CAST IRON—3 Sizes (3, 5, and 7 Sections)

RA-DO FUMELESS GAS **RADIATORS**

The Ideal "Year-Round" Heating System
For The Home—New or Old

Easiest and Cheapest to Install
Lowest Operating Cost

POTTER RADIATOR CORPORATION

5954 Pasadena Ave., LOS ANGELES
393 Sutter St., SAN FRANCISCO
1700 San Pablo Ave., OAKLAND

POWER AND HEATING
BOILERS

STEEL TANKS, STACKS, BREECHINGS, SHEET AND PLATE WORK
MACHINERY AND IRON CASTINGS

MAIN IRON WORKS

Main Office and Works: 7th, DAGGETT AND 16th STS. San Francisco, Calif.
Telephone Market 752-753

PUMPING MACHINERY

"AMERICAN-MARSH"
House, Sump *and*
Fire Pumps

FOR ALL SPECIF CATIONS

SIMONDS MACHINERY CO., 117-121 New Mortgomery Street
PHONE KEARNY 1457 SAN FRANCISCO

Why a *tiled* bathroom should have *china* fixtures

Combination Soap Holder and Safety Wall Grip

Tumbler Holder

Sponge Holder

FOR covering bathroom walls, tile is the accepted standard but the fixtures built into these walls should be CHINA.

Tile fixtures, have a thinly glazed surface, which may craze within a few months. These cracks, if filled with soap particles, appear soiled and unsightly, and are unsanitary.

Fairfacts Fixtures are made of solid snow-white china. They are durable—they will even outlast the tiled walls and they never crack, craze or discolor.

Fairfacts Fixtures are made in a wide variety of styles, including many combination fixtures. They cover practically every possible need of the bath. The designs are simple, distinctive, and harmonious.

Fairfacts Fixtures are installed by tile contractors—the only trade that does this work and should be included in the tile contract. We do not sell the plumbing trade.

Send for Catalogue F. Details and Specifications also appear in Sweet's Architectural Catalogue.

THE FAIRFACTS COMPANY, INC.
234-236 West 14th Street, New York City
Dept. E

(Look for this BATHROOM Fairfacts FIXTURES *Trade Mark)*

Fairfacts Fixtures

BUILT IN YOUR BATHROOM WALLS

Wayne

Brought

Judge Arthur J. Tuttle, sitting in the United States District Court at Detroit handed down his decision from the bench declaring that the Wayne Tank & Pump Company had not in any way infringed the patent rights of the Permutit Company in respect to the latter's water softening system, for the simple reason that Permutit had no patent rights.

He declared the Permutit patent absolutely void.

Permutit had brought suit against the Wayne Tank & Pump Company on the grounds that Permutit, and Permutit only, had a right to manufacture and sell a water softener using the mineral known as zeolite.

Wayne clearly and overwhelmingly proved that Permutit was not the original zeolite water softening system.

Judge Tuttle at the end of a nine days trial handed down his decision immediately after arguments had been heard.

Read the Extracts from the Wording of His Decision on Opposite Page

Way

Symbol of Satisfaction

Wins Suit by Permutit

What Judge Tuttle Said:

"I started out with the presumption that this patent (The Permutit Patent) was valid. * * * That put the burden on the other people (The Wayne Tank & Pump Company.) * * * That shifted early in the case, because in the hearing here early, I began to discover the indefiniteness, the uncertainty and the unsatisfactory things about the patent in suit (The Permutit Patent.)

"The reason this case has taken nine long days is because I have seen this matter in a way that did not coincide with the decision in the second Circuit, and I have been reluctant to reach a decision which is contrary to the decision reached there.

"I have much to help me which the court at Buffalo did not have. I have had more testimony. I have had new testimony.

" * * * and my decision is that the patent is void.

" * * * The patent in suit is no more entitled to the credit for the property possessed by zeolites than a man is entitled to credit for making water run down hill, or entitled to a patent on gravity. It is a natural property known to the world, known to the art (of water softening), prior to the time of the patent in suit."

Wayne Tank & Pump Co., 862 Canal St., Ft. Wayne, Ind.

Wayne Tank and Pump Co. of Canada, (Ltd.), Toronto, Ontario, Canada
Wayne Tank & Pump Company, 9 Kingsway, London, W. C. 2, England

Division Offices in: Atlanta, Boston, Chicago, Cincinnati, Cleveland, Columbus, Dallas, Dayton, Des Moines, Detroit, Indianapolis, Jacksonville, Kansas City, Milwaukee, Minneapolis, New York, Omaha, Peoria, Philadelphia, Pittsburgh, San Francisco, St. Louis & South Bend

Warehouses in: Philadelphia and San Francisco

An International Organization with Sales and Service Offices Everywhere

REG. U.S. TRADE MARK

Wayne equipment is manufactured completely in one plant and every phase of its operation is backed and guaranteed by the largest institution in the world producing water softeners, with 30 years' experience and a sales and service organization international in scope.

To the Readers of The Architect and Engineer

AT this season of the year our thought turns from the material and as we contemplate the real things of life, our Christmas wish is that we may reflect toward you more of the spirit that was manifested on the Galilean shore nineteen centuries ago.

Strable Hardwood Co.

Distributors

STRABLEWOOD QUALITY HARDWOODS

537 First Street, Oakland, California

Old Mission Portland Cement Company

Each shipment of "OLD MISSION" Portland Cement is guaranteed not only to equal but to surpass all requirements of the standard specifications for Portland Cement as adopted by the U. S. Government and by the American Society for Testing Materials. A Guarantee Certificate is mailed with the bill of lading of each car, giving number of car, date packed, and number of barrels, over the signature of the chief chemist.

8000 SACKS DAILY

SALES OFFICE:
MILLS BLDG., SAN FRANCISCO
PHONE SUTTER 3075

PLANT:
SAN JUAN, CAL.

ATCHISON
REVOLVING DOORS

Straight or Curved Wings

ASK FOR CATALOG

PACIFIC MATERIALS CO., 525 MARKET ST., S. F.

PALACE HARDWARE CO.

Good Buildings Deserve Good Hardware

581 MARKET ST.

CORBIN

6063 SUTTER

"San Francisco's Leading Hardware Store"

EMPIRE
HARDWALL PLASTER

MANUFACTURED BY

Pacific Portland Cement Company, Consolidated

PACIFIC BUILDING PORTLAND | SAN FRANCISCO SAN JOSE | PHONE GARFIELD 4100 LOS ANGELES

Fitzhugh Building, *San Francisco* Reid Bros., *Architects*

Interior Trim in this Modern Office Building is

"Bataan" Mahogany

Different from Philippine mahogany — grown in the highlands in the Island of Luzon — free from worm holes — retains its lustre for all time

CADWALLADER-GIBSON CO., INC.

5th and Brannan Streets Phones Douglas 1737-8 San Francisco, Calif.

When writing to Advertisers please mention this magazine.

GALILEO HIGH SCHOOL, SAN FRANCISCO
John Reid, Jr., Architect Robert Trost, General Contractor
Matt McGowan, Masonry Contractor

"Dickey Mastertile Walls Chosen for Economy" —says John Reid, Jr.

Dickey Mastertile was selected for the curtain walls of Galileo High School "for reasons of economy," says City Architect, John Reid, Jr.

Here are the Dickey Mastertile economies:—

(1) Lowest in unit cost;
(2) Most speedily erected;
(3) Interior furring or other water-proofing unnecessary, plaster being applied directly to the inner surface of the tile;
(4) Stucco or cement plaster applied to exterior is on to stay; it never cracks, peels or needs attention;
(5) The dead air spaces in the Mastertile wall insulate against cold, heat, moisture and street noises.

DICKEY

FACE BRICK AND MASTERTILE

Manufactured by Livermore Fire Brick Works — Manufactured by California Brick Company
604 Mission Street, SAN FRANCISCO, *and* Builders Exchange, OAKLAND

Home of E. F. Westerling of the firm of Colby and Westerling, Architects, Minneapolis, Minnesota, in which Bruce Clear plain Red Oak Flooring was used

Why do we say—

Bruce Oak Flooring the Best Oak Flooring

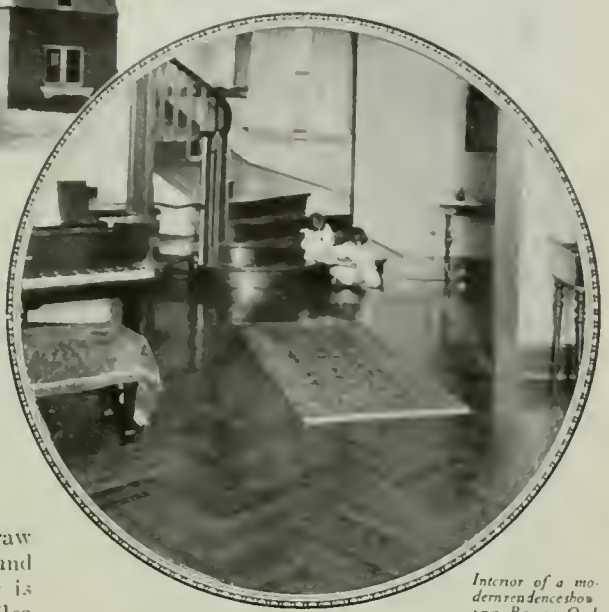
Because it is made of the best raw material; 60% of the desirable and available supply of oak lumber is found within a radius of 200 miles of Memphis and Little Rock.

Because in our extensive yards, the lumber is thoroughly air-dried before reaching the kilns.

Because each kiln load is tested separately before, during and after kiln drying, to insure absolute uniformity of moisture content.

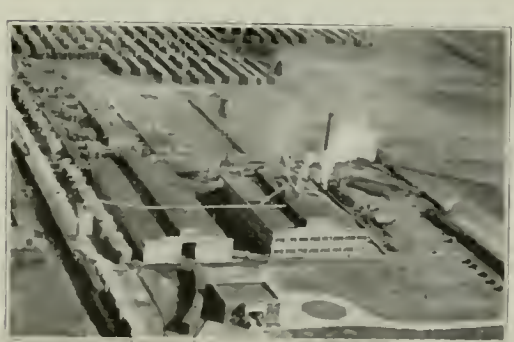
Because it is manufactured in our modern daylight plants, built and equipped for the purpose, and is subjected at each stage to the most rigid tests for quality and uniformity.

The fact that we are the largest makers of oak flooring in the world means economy in production, assured quality, and satisfaction to every user of Bruce Oak Flooring. In specifying Bruce Oak Flooring you are assured of a floor that will Stay in Place When Laid.



Interior of a modern residence showing Bruce Oak Flooring in Herringbone design.

We will be glad to send you literature on design and strip flooring helpful to architects, and to cooperate with you in any way.



The American Architect Specification Manual contains our standard specifications.

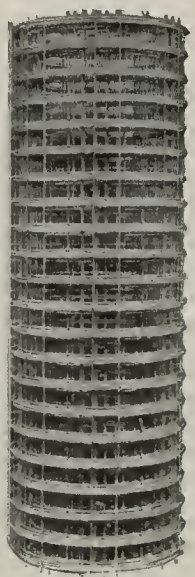
BRUCE

E. L. Bruce Company

MEMPHIS TENNESSEE

See our Catalog in Sweet's

Largest Makers of Oak Flooring in the World



Clinton

Electrically welded Wire Fabric

The Ideal Mesh Reinforcement for Concrete

Immediate Shipment from Stock
San Francisco
Los Angeles
Seattle

Wickwire Spencer Steel Corporation

SAN FRANCISCO
141 Townsend St.
Douglas 1421

LOS ANGELES
316 E. Market St.
Pico 4851

Recent

Office Buildings

STANDARD OIL
SAN FRANCISCO

MATSON
NAVIGATION CO.
SAN FRANCISCO

CALIFORNIA STATE
LIFE INSURANCE
COMPANY
SACRAMENTO

Lindgren & Swinerton, Inc.

New Standard Oil Building
225 Bush Street
On the Sixth Floor

"CALIFORNIA STUCCO"

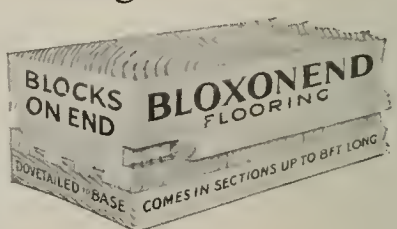
It is a finishing plaster coat made in many beautiful colors, from a true Portland Cement base, which assures everlasting qualities.

"The Stucco which is making California Architecture famous"

For Sale by All Dealers

California Stucco Products Co.
58 SUTTER ST., SAN FRANCISCO
1503 S. ALAMEDA ST., LOS ANGELES

Lasting Smoothness!



While it is an established fact that Southern Pine blocks on end will withstand hard wear indefinitely, Bloxonend is the only end grain flooring that combines durability with lasting smoothness. It is laid over concrete without embedding sleepers. Users include leaders in all industries.

Write for Specifications

Carter Bloxonend Flooring Co.

H. M. HOLWAY, District Manager
San Francisco: 1007 Hobart Bldg.
Los Angeles: 600 Metropolitan Bldg.
Portland: Cham. of Com. Bldg.

BLOXONEND
Lays Smooth—Stays Smooth

With C. Howard Crane at has been our privilege to devise that interesting marble combination in the new home of the American Bond & Mortgage Co., New York City.

Marble manufactured by Mc Gowan & Connolly.

Hauteville, M. H. (Genuine) Black & Gold T. K. Pink Tennessee

YOUR experience with marble has undoubtedly been similar to ours—that there are certain ones that are inherently in harmony.

Hauteville M. H. (genuine) Black and Gold, and T. K. Pink Tennessee are but three such of the 150 from which we can offer you a selection. Your inquiries will be most welcome.

TOMPKINS-KIEL MARBLE COMPANY

505 FIFTH AVENUE
NEW YORK CITY

DISTRIBUTORS MARBLE-STONE

CHICAGO
SAN FRANCISCO
SYLACAUGA, ALA.
KNOXVILLE, TENN.

BEN-OX

Easy-to-Wire Interchangeable *Industrial Lighting* Equipment

Cast Basic Ceiling Unit equipped with Ben-ox Thread. Fastens to standard outlet box.

Keyless Socket for Conduit Connection. Equipped with Ben-ox Thread.

Reflectors—Angle, Bowl and RLM Dome, equipped with Ben-ox Thread.

Where local control is desired the Pull Chain Element is simply screwed in between Ceiling Outlet or Socket and Reflector.

Wiring is looped through or ended under large terminal binding screws.

Does away with soldered and taped joints.

Reduces installation time to a minimum.

Completes wiring—inspection may be secured, lamp screwed in and temporary light obtained. Reflectors or other fixture parts, equipped with Ben-ox thread, may be attached without disturbing the original wiring.

Easy to Clean

By means of the Ben-ox thread, it is the work of a minute to remove reflector for cleaning.

Whenever and wherever industrial lighting is being considered it will pay to tie up with the Ben-ox thread.

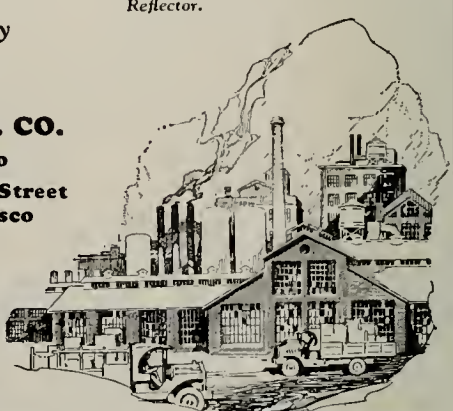
Our nearest office will gladly furnish full information

BENJAMIN ELECTRIC MFG. CO.

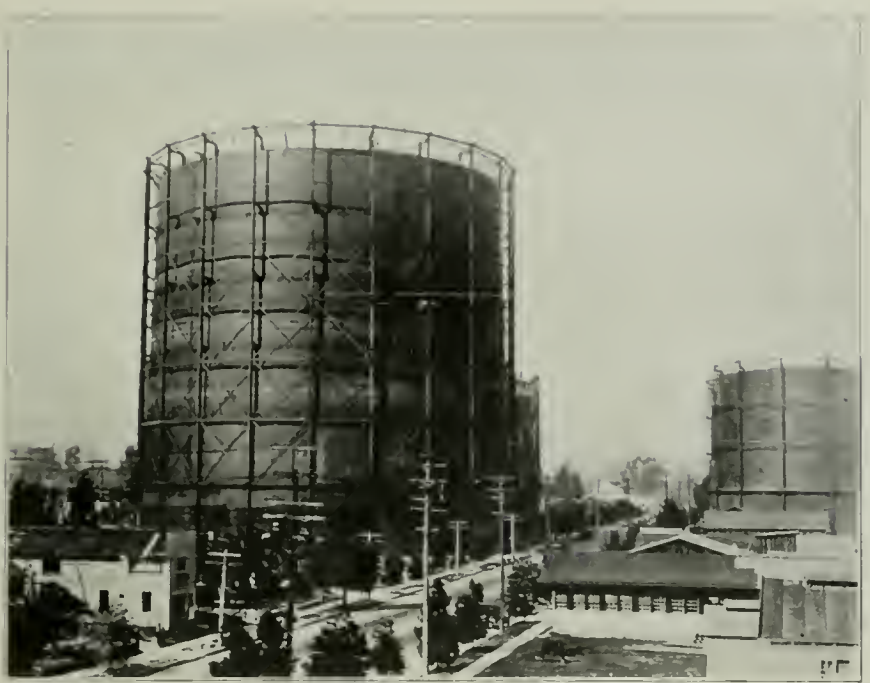
847 W. Jackson Blvd., Chicago

247 W. 17th Street **580 Howard Street**
New York **San Francisco**

Toronto and London



BENJAMIN



Battery of gas holders erected by the Los Angeles Gas & Electric Corporation. ARMCO-Ingot Iron used for lifts and crowns.

Armco-Ingot Iron Selected by Test

Los Angeles Gas & Electric Corporation covered all its buildings around the gas plant with various brands of corrugated sheet metal. Time proved ARMCO-Ingot Iron far outlasted all the other brands. Consequently, Ingot Iron is now standard for all roofing construction.

When the time came to select the sheet metal for the lifts and crowns of four huge gas holders, having a combined capacity of 27,000,000 cubic feet, Ingot Iron was the choice.

Where to order ARMCO-Ingot Iron sheets: San Francisco Warehouse, Tenth and Bryant Sts.; California Cornice Works, Los Angeles; A. M. Castle Co. of Washington, Seattle; Spokane Sheet Metal Supply Co., Spokane.

THE AMERICAN ROLLING MILL COMPANY

MIDDLETOWN, OHIO

ARMCO

TRADE MARK

INGOT IRON

This beautiful SNOW WHITE, SANITARY SINK will not only contribute to the appearance of the Home or Apartment House, but it will make the property more rentable or salable. Architects make no mistake when they specify Petrium Snow White Sinks.

PETRIUM SANITARY SINK CO., *Fifth and Page Streets, Berkeley*
On display: Hoosier Store, Pacific Building, San Francisco
Sterling Furniture Co., 1049 Market St., San Francisco
Building Material Exhibit, 77 O'Farrell St., San Francisco
Oakland—Building Material & Manufacturing Exhibit, 1424 Franklin Street.

Every Room Adds at Least $1,200 to the Cost of a Home or Apartment House

Hotel Cecil, San Francisco
Equipped with Wall Beds

Portal Wall Beds

are real space and cost savers. Those who would build wisely in these days of flunctuating prices, provide for PORTAL WALL BEDS.

MARSHALL & STEARNS CO.
WALL BEDS
"HIGHEST AWARD ALWAYS"

1152 Phelan Building
San Francisco

1774 Broadway
Oakland

When writing to Advertisers please mention this magazine.

F. H. P. ATKINS HOUSE, PIEDMONT, CALIFORNIA
F. H. P. ATKINS, ARCHITECT

CORDOVA ROOF TILE

FURNISHED AND LAID BY

GLADDING, McBEAN & CO.

FOUNDED 1875

CROCKER BUILDING, SAN FRANCISCO

The beautiful color combinations obtained with Cordova Roof Tile are achieved by the nature of the clay and the scientific process of mixing and burning. This gives to all roofs a soft harmonious overtone, which is, perhaps, one of their greatest charms.

TROPICO POTTERIES, INC.
GLENDALE, LOS ANGELES
CALIFORNIA

ARTSTONE, Inc.

ORNAMENTAL

GARDEN FURNITURE

ARTIFICIAL STONE

PLASTER OR CONCRETE

BUILDING TRIM

GARDENS BEAUTIFIED

— ARCHITECTURE SCULPTORS —

Factory:
356 DORE STREET
San Francisco

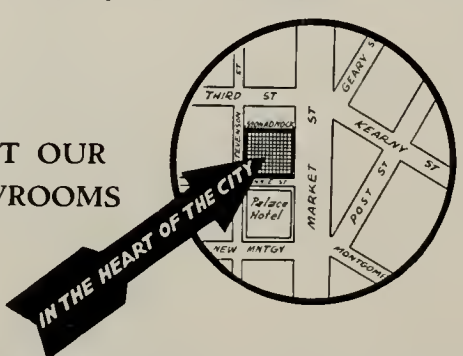
DESIGNS
CATALOGUES
on request

Show Room and Office:
2 AND 4 VALENCIA STREET
Telephone Hemlock 421
San Francisco, Cal.

A Permanent Exhibition of Architects' Samples
Building Materials, Engineering Equipment, Specialties

Universal Exhibits

VISIT OUR SHOWROOMS



PLAN TO DISPLAY YOUR PRODUCTS

MONADNOCK BLDG., 681 MARKET ST.

PHONE DOUGLAS 93 SAN FRANCISCO, CALIF.

JOHNSON'S ROTARY CRUDE OIL BURNER

Can be installed in any BOILER or FURNACE

Gives Satisfactory Results
Simple to Operate—Automatic—Safe
Let us tell you more about this Oil Burner.

BURNER IN OPERATION

S. T. JOHNSON CO.

1337 Mission Street
San Francisco
Phone Market 2759

940 Arlington Street
Oakland
Phone Piedmont 2815

Agencies: SEATTLE LOS ANGELES FRESNO SAN DIEGO SACRAMENTO

SIMPLEX
TRADE MARK

SIMPLEX BURNERS

For High or Low Pressure Boilers, Water Heaters, Kiln Dryers, Furnaces, Etc. Operated by Fractional H. P. Motors. Guaranteed for Efficiency and Durability.

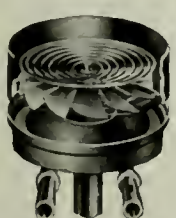
BUNTING IRON WORKS

Factory Berkeley

1215 FIRST NATIONAL BANK BLDG.
SAN FRANCISCO Phone Sutter 3225

Member of the Oil Burners Manufacturers' Association of California

Specify "ROTARY"—the Oil Burner with the Revolving Grate



Produces the highest efficiency in all standard furnaces, either steam, hot water or hot air, because of the short high temperature flame.

ROTARY OIL BURNER COMPANY, Inc.

159-12th STREET, OAKLAND PHONE OAKLAND 2994

RAY BURNER

Architects—Specify **BABY RAY**

Domestic Type Burner. It burns low-priced Diesel Oil with high efficiency. Especially designed for bungalows and dwellings.

POWER PLANT ENG. CO.
1933 5th Ave., Seattle

J. F. SHEA
2nd and Ankeny Sts.
Port'and, Ore.

W. S. Ray Manufacturing Co.
118 New Montgomery St.
San Francisco
Plant:
Milton and Bosworth Sts.
San Francisco

W. S. RAY MFG. CO.
2442 San Pablo Ave.
Oakland

RAY OIL BURNER CO.
(of So. California)
831 Crocker St.
Los Angeles

Made by
C. B. BABCOCK COMPANY
San Francisco

Sold by
FRANK J. KLIMM COMPANY
456 Ellis St., San Francisco
PACIFIC GAS APPLIANCE COMPANY
1533 Clay Street, Oakland

WARMTH WITHOUT WAITING

Just a touch of the button on the wall and the pleasant heat of the Babcock High Efficiency Gas Furnace fills the house. No delay — no dirt — no drudgery.

Designed by gas engineers, the Babcock is free from leaks and odors.

5 YEAR GUARANTEE

BABCOCK
"HIGH EFFICIENCY"
GAS FURNACE

Pump Governors
Oil-Burner Governors
Reducing Valves
Safety Valves
Oil Valves
Blow Off Valves
Boiler Feed Valves
Vacuum Pump Governors
Vacuum Regulating Valves
Oil Pumping Sets
Little Giant Improved Oil Burners
Duplex Oil Pumps
Rotary Oil Pumps
Oil Heaters
Dralt Gauges
Boiled Feed Pumps

G. E. WITT CO., Inc., Engineers

C. W. VAUGHN, President and Manager
MANUFACTURERS AND DISTRIBUTORS
862-864 Howard St. Phone Douglas 4404 San Francisco, Cal.

A. F. Edwards, Pres.
J. M. Fabbris, Vice-Pres.
J. A. Mackenzie, Secy.

Office Telephone Market 5070

Chas. F. Eisele, Asst. Mgr.
J. Rubiolo, Asst. Mgr.
D. A. Batsford, Asst. Mgr.

AMERICAN MARBLE & MOSAIC CO.

25-59 Columbia Square, San Francisco, Calif.
Near Folsom St., Bet. 6th and 7th Sts.
Factory on Water Front, South San Francisco. Phone South San Francisco 161

When writing to Advertisers please mention this magazine.

EST 1905

IFM 1922

the ARCHITECT & ENGINEER

Contents

VOL. LXXV. DECEMBER, 1923 Number 3

CHI KAPPA TAU FRATERNITY HOUSE, BERKELEY - *Frontispiece*
W. R. Yelland, Architect

WORK OF W. R. YELLAND; ARCHITECT - - - - - - 51
I. F. Morrow

THE SERVICES OF AN ARCHITECT - - - - - - - 63
C. E. Schermerhorn, Architect

SOLVING THE MARKET STREET TRAFFIC PROBLEM - - 64

PORTFOLIO OF SOME RECENT WORK OF F. J. DELONGCHAMPS, ARCHITECT - - - - - - - - - 67

S. W. STRAUS & COMPANY NEW BUILDINGS - - - - 77

SPECIFICATION WRITING—A HIGHLY SPECIALIZED UNDERTAKING - - - - - - - - - - - - - 80
William F. Wischmeyer

CHARMING HOME INTERIORS - - - - - - - - 84
E. B. Vockel

SOME INTERESTING FRENCH DOORWAYS - - - - - - 85
Photographs by R. H. Bickel

VITAL POINTS IN SPECIFICATIONS - - - - - - - 92
Ira T. Martin

THE LOS ANGELES UNION PASSENGER TERMINAL - - 95
Geo. S. Hill

THE BUTTERFLY MAP OF THE WORLD - - - - - - 99
B. J. S. Cahill, F.R.G.S.

Published Monthly by
THE ARCHITECT and ENGINEER Inc.
626-627 Foxcroft Building-San Francisco
W. J. L. Kierulff, President — Frederick W. Jones, Vice-President — L. B. Penhorwood, Secretary

PHI KAPPA TAU FRATERNITY HOUSE, BERKELEY, CALIFORNIA W. R. YELLAND, ARCHITECT

Frontispiece
The Architect and Engineer
December, 1923

PUBLIC LIBRARY

THE
ARCHITECT
AND
ENGINEER

DECEMBER
1923

VOL. LXXV.
No. 3

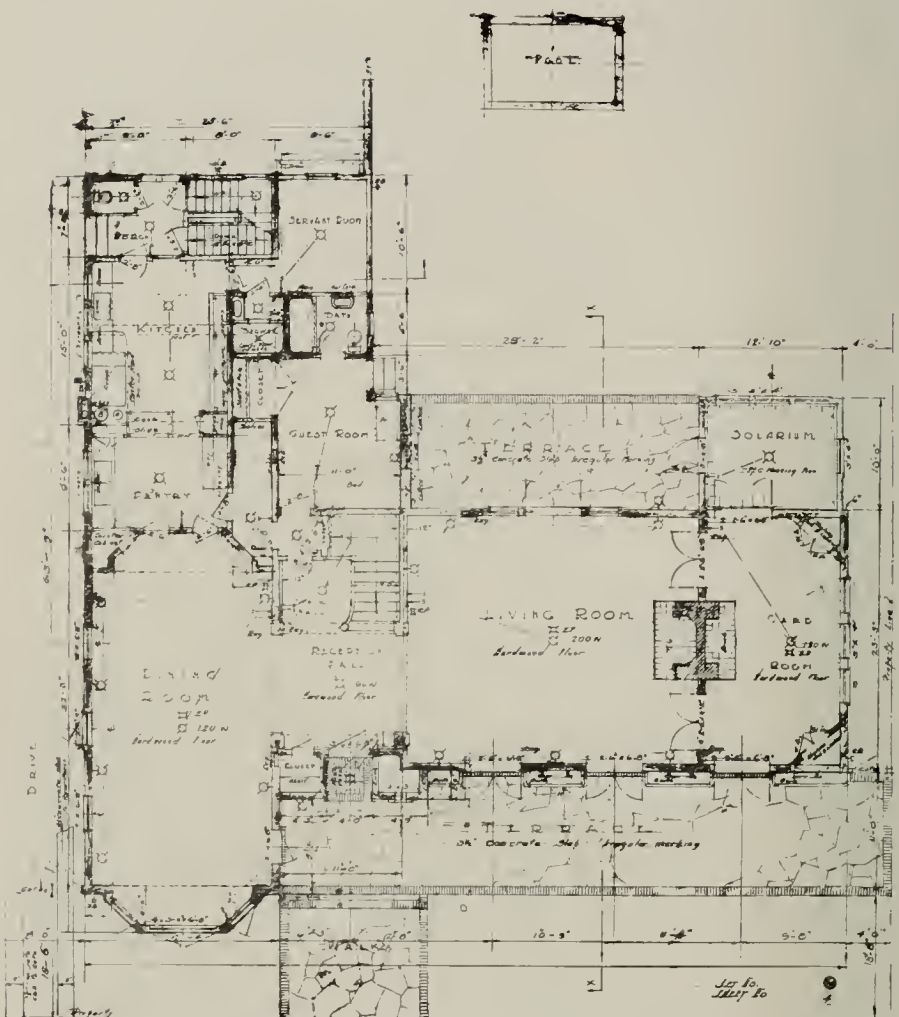
Work of W. R. Yelland, Architect

AT the time when I went to college—within the memory, that is to say, of people still living and young enough not to have forgotten—fraternities which owned houses built expressly for their own use were a conspicuous minority, while most of such organizations merely rented houses which had been built for no conceivable use but to rent or sell to people who knew no better. In this respect also times have changed. Fraternity houses designed as such have perhaps become the rule. The problem has become one as individual as another, so that an architect who has been fortunate enough to land two of them is entitled to designate himself a specialist—perhaps even one will do if he can get away with it.

I do not know if Mr. Yelland considers himself in that commercially lucrative class—(how deferential an uninformed public is toward anyone who has the nerve to announce himself a specialist). But at any rate, Mr. Yelland has shown himself equal to the fraternity demands.

It is, in fact, a problem which differs in material respects from other types of housing. The fraternity house must accommodate a large group, heterogeneous when compared with the family, yet distinctly homogeneous when compared with most other forms of club, group and community housing. It is, in a way, a home; yet a home much more impersonal, much more free and open, than a family one. Its architecture requires larger scale, less seclusion, obvious urbanity not without a touch of impressive indifference. In other words, it must appear conspicuously genteel without suggesting the presence of fussy old ladies. Mr. Yelland has sensed the necessary balance. His fraternity houses are livable but not unmanly.

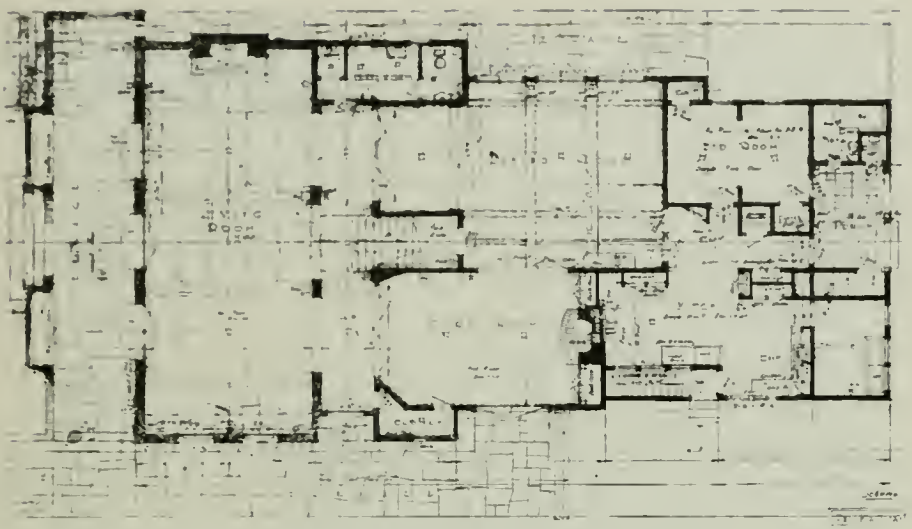
The private residences are more personal. That of the Misses Lane is quaintly picturesque without and within. The grassy hill slopes, the masses of eucalyptus trees, the glimpses of the city below, reinforce



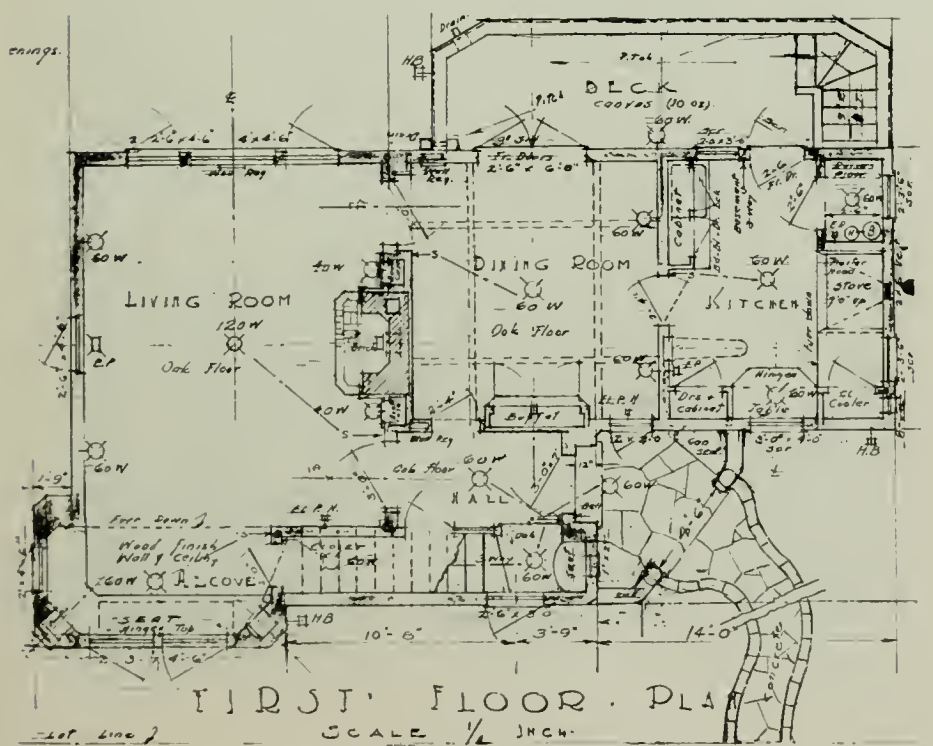
THETA CHI FRATERNITY HOUSE, BERKELEY
W. R. Yelland, Architect

my oft-repeated contention that this California country is a conspicuously pleasant place for building houses. Mr. Yelland has plainly felt the charm, and has had enjoyment out of working his composition with its site.

The perspective for the Chinese hospital attacks the problem of the meeting of East and West in architecture. The formula is not unfamiliar—the service is performed by the occidental body, while character is furnished by oriental haberdashery. As interpreted by the strokes of a smpathetic pencil the result is not at all unsuccessful. One wonders if Mr. Yelalnd will be skillful enough to preserve the atmosphere and charm when confronted by the more rigorous exactions of tangible and indifferent materials.—I. F. M.



PHI KAPPA TAU FRATERNITY HOUSE, BERKELEY
W. R. Yelland, Architect



HOUSE OF THE MISSES LANE, OAKLAND
W. R. Yelland, Architect

HOUSE OF THE MISSES LANE, OAKLAND, CALIFORNIA
W. R. YELLAND, ARCHITECT

HOUSE OF THE MISSES LANE, OAKLAND, CALIFORNIA
W. R. YELLAND, ARCHITECT

HOUSE OF THE MISSES LANE, OAKLAND, CALIFORNIA
W. R. YELLAND, ARCHITECT

HOUSE OF THE MISSES LANE, OAKLAND, CALIFORNIA
W. R. YELLAND, ARCHITECT

THETA CHI FRATERNITY HOUSE, BERKELEY, CALIFORNIA
W. R. YELLAND, ARCHITECT

PHI KAPPA TAU FRATERNITY HOUSE, BERKELEY, CALIFORNIA
W. R. YELLAND,
ARCHITECT

HOUSE OF MR. JOSEPH HOLROYD, BERKELEY
W. R. YELLAND,
ARCHITECT

SAN FRANCISCO
PUBLIC LIBRARY

PROPOSED CHINESE HOSPITAL, SAN FRANCISCO
W. R. YELLAND, ARCHITECT

CHINESE BAPTIST CHURCH AND CLUB, SAN FRANCISCO
W. R. YELLAND, ARCHITECT

The Services of an Architect

By C. E. SCHERMERHORN, Architect

THE thinking public are awake to the value of the services capable of being rendered by an architect, and recognize that his province bears the same relation to the owner as that of a specialist in medicine or surgery to his patient. In countless ways the expert advice and suggestions of an experienced architect will be found to have substantial value, and his work, in this respect, cannot be economically ignored by anyone who has determined to build, whether it be a bungalow or a great commercial or monumental project.

When a location is in contemplation or has been determined upon, the architect selected should be made acquainted with the owner's ideas and conception of what the building should be, and its character and purposes. The exigencies of the site should then be studied, and the climate, outlook, grades, drawings and other essential factors carefully considered as their influence makes for the success or failure of the completed building.

This will enable the architect to obtain a knowledge of the essential requirements to discuss any fallacies, and to sketch out practical and comprehensive plans for the interior arrangements and exterior design, organized and adapted to the real need and precise conditions, in conjunction with the economic conditions that underlie the problem. These preliminary studies may offer several solutions, one being advantageous from one point of view, and another from another point of view, which are then capable of being intelligently discussed with the client and permit of definite conclusions being reached.

From these sketches and studies, showing the general plan and design of the contemplated building, with their accompanying synopsis of the materials of construction, fixtures and finish, close approximate estimates may be obtained from contractors. These estimates may afford a basis for determining future possibilities of the project and enable its further development by the preparation of the final working drawings, which involve an accurate layout of all floors, of all the elevations, both interior and exterior, also typical sections and detailed methods of construction. The working drawings must be so complete that a contractor will know exactly how and what material every part of the building is to be constructed, thereby forestalling any guessing, which so frequently is costly to the owner and unsatisfactory to the builder.

The working drawings are accompanied by specifications, taking up in the form of a description what it is impossible to express on the drawings, and stating therein with clearness and precision the grades and character of the work, materials, ingredients, appliances and fixtures required to be used and installed.

These specifications also show how the contractor shall do certain portions of the work and co operate with the various sub-contractors; they also state the indemnity bonds, insurance, etc., required, and, in general, form a complete thesis of the building to be constructed, leaving no doubt in the mind of the bidder, as to the exact amount and character of the work called for.

This assures that all estimates received shall have been intelligently submitted, and that, when the contract is ultimately awarded, the contractor can plan its progress with a definite knowledge of the materials and requirements, the work being thus carried out with greater expedition and consequent economy.

After it has been determined to proceed, a legal, binding and definite contract must be prepared by the architect, in which the requirements on both sides are clearly set forth, the "instruments of service," in the form of specific and technically intelligible drawings and specifications, being made a cohesive part of this contract. Definite terms of payment, time of completion, and requirements in connection with lien laws must be provided for.

There must also be provisions in the contract for fire, lightning, casualty; compensation and contingency insurance, for necessary bonds in connection with completion, and for compliance with local municipal or state requirements, departmental directions or rulings, ordinances and acts.

It is only by following these steps, in their logical, natural sequence, from the very conception of the building to its final completion, that an owner can obtain the best results with a minimum of worry and a maximum of economy.

Full architectural services, rendered by a competent man, will save many times his comparatively small compensation. The instruments of service, the plans and specifications, are the fundamental element in the contract, and to produce them requires thought, experience and learning, also familiarity with the qualities, properties, peculiarities, weight and strength of materials, the weights of structures and the relationship of the various operations to be performed by the many trades represented in the building.

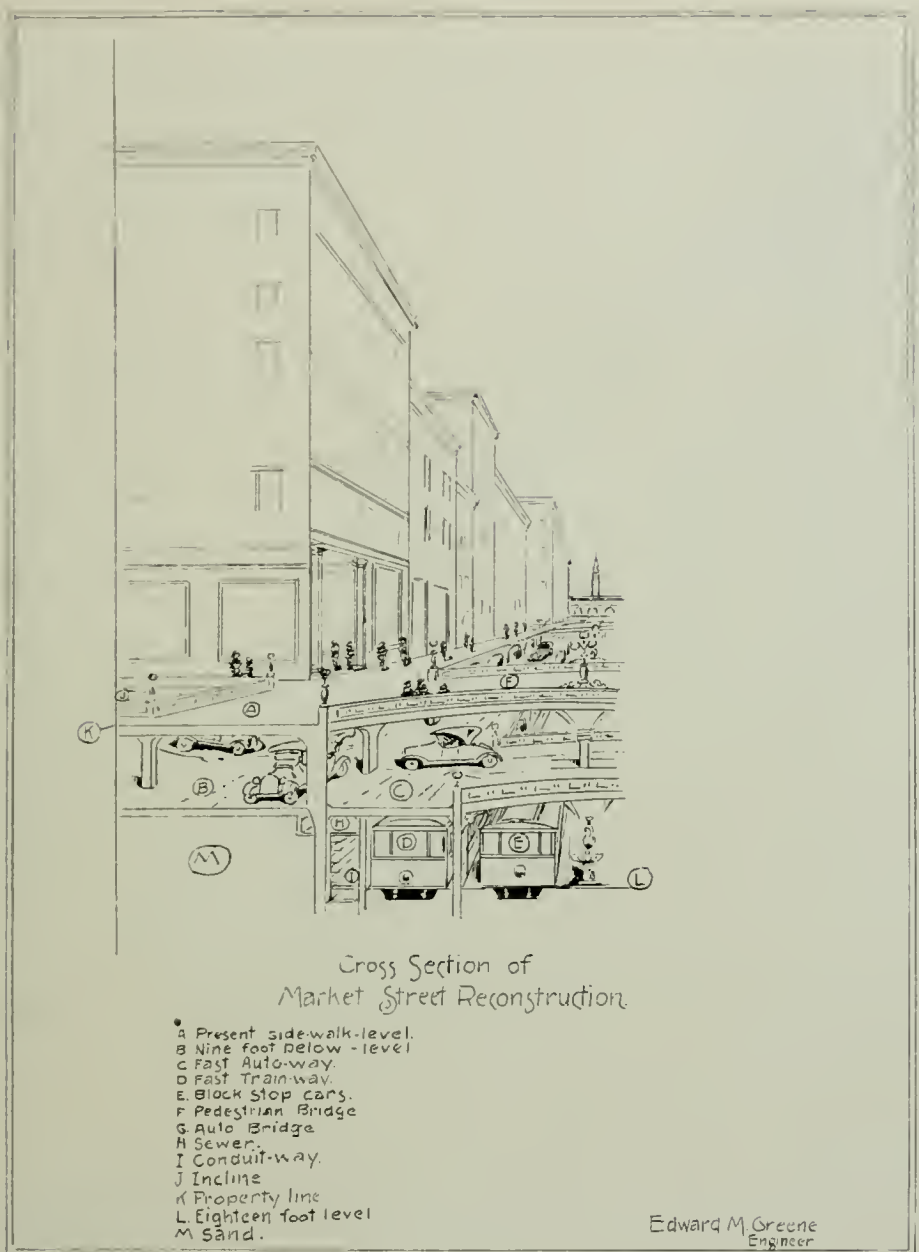
* * * *

Solving the Traffic Congestion, Market Street, San Francisco

OF the many suggestions for solving the traffic congestion on Market street, San Francisco, probably none has met with greater consideration than that offered by Mr. Edward M. Greene, 900 Oak street, San Francisco. Mr. Greene declares that the traffic must be subdivided into the five fundamental elements that cause it, namely: pedestrians, fast autos, slow autos, fast train service, and block stop cars. To quote Mr. Greene:

"These five elements must be segregated and each one given its own channel of travel, thus there will be five channels, and as there are two sides to a street, an up-side and a down-side, there will be ten channels. Any two of these elements thrown together will congest, so, in order to solve this problem we must create ten separate and distinct travel-ways or we may as well leave it entirely alone. Given these ten separate channels the problem automatically solves itself. How then can these ten ways be best created? Market street is 120 feet wide from property line to property line. This would allow twelve feet to each travel-way; obviously not enough, but by placing a waist high parapet along the outer edge of the present sidewalk and dropping down nine feet, we will have the entire width beneath the sidewalk (22 ft.) for a slow moving, shopping auto-way with access to a new shopping floor created on that level, while outside of its supporting columns for a distance of eighteen feet to another parapet becomes a fast auto-way where cars can travel as speedily as the law permits.

"Dropping down another nine feet beneath this fast auto level we have a fast train-way, where low broad auto-type cars, running in a ditch that brings their floor level with the platform's travel. These trains run several blocks at a time and stop beneath the bridges at a



common platform with a similar type of block-stop cars to which you may transfer, while back of this train-way are sewers and conduit-ways. By this plan forty feet of actual useable width is added to each side of the street or eighty feet in all. This eighty feet, added to its present width of 120 feet, makes a total of two hundred feet, and gives the necessary ten travel ways with ample space to function."

MODOC COUNTY COURT HOUSE, ALTURAS
F. J. DELONGCHAMPS, ARCHITECT

Portfolio of

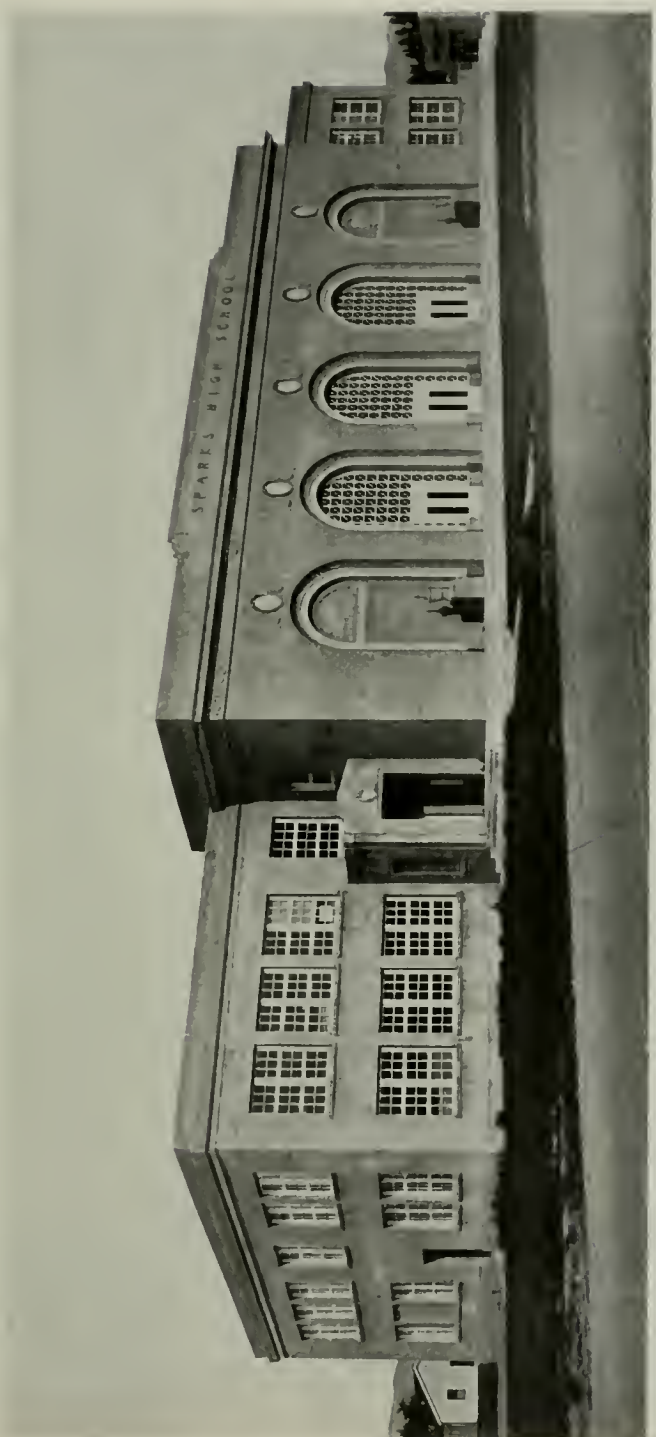
Some Recent Work of

F. J. DELONGCHAMPS, ARCHITECT

RENO, NEVADA

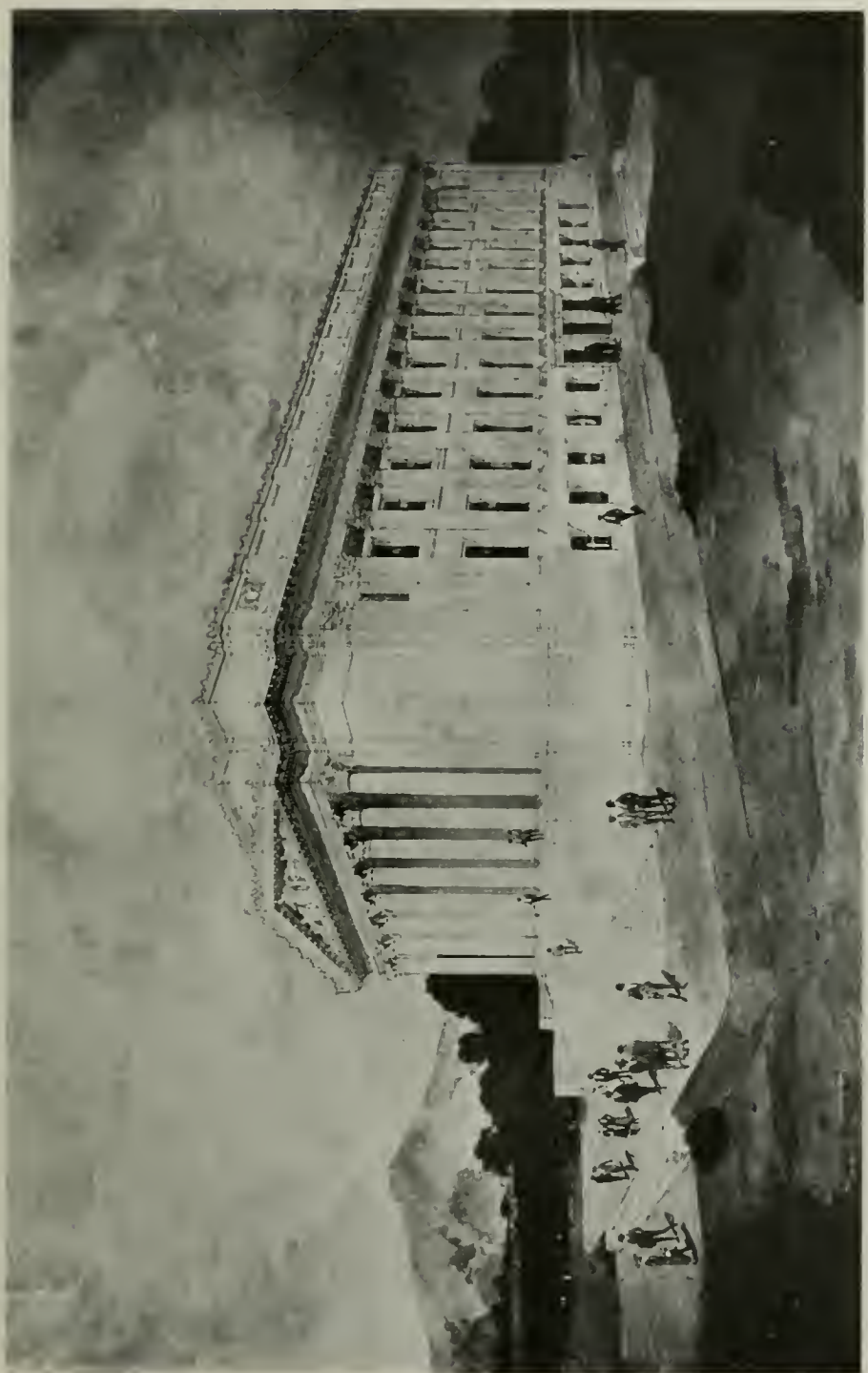
NIXON MAUSOLEUM, RENO, NEVADA
F. J. Delongchamps, Architect

EDUCATIONAL BUILDING, UNIVERSITY OF NEVADA
F. J. DELONGCHAMPS, ARCHITECT



SPARKS HIGH SCHOOL, SPARKS, NEVADA
F. J. DELONGCHAMPS, ARCHITECT

NEVADA STATE HOSPITAL, RENO, NEVADA
F. J. DELONGCHAMPS, ARCHITECT



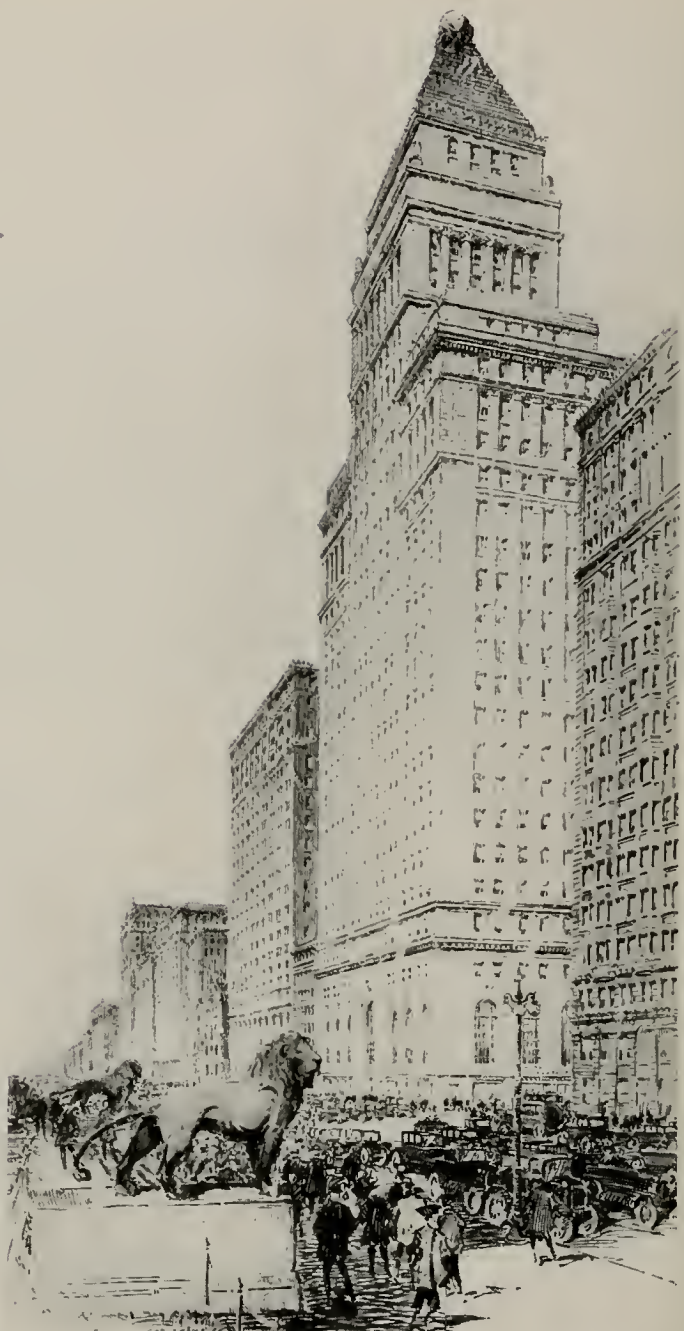
STUDY BY F. J. DELONGCHAMPS, ARCHITECT

STUDY BY F. J. DELONGCHAMPS, ARCHITECT

RENO NATIONAL BANK, RENO, NEVADA
F. J. DELONGCHAMPS, ARCHITECT

BAPTIST CHURCH, RENO, NEVADA
F. J. DELONGCHAMPS, ARCHITECT

TWO RESIDENCES, RENO, NEVADA
F. J. Delongchamps, Architect



NEW HOME OF S. W. STRAUS & CO., CHICAGO, ILLINOIS
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS

S. W. Straus & Company New Buildings

TYPICAL of that spirit of great achievement which has so long characterized Chicago is the new Straus building of that city, now under construction, a massive white structure dominating the world famous Michigan Avenue skyline and exemplifying the best thought of modern office building architecture and construction. As its planning commanded the attention of architects throughout the country up to the time the design was approved by a commission of nationally known experts, so its building holds the interest of engineers. Submission of the plans to the professional scrutiny of this commission prior to adoption, marked a new step in commercial building construction, the result being a set of plans declared to be as nearly perfect as modern artistry and professional ingenuity have achieved. The huge building is already beginning to take shape, with steel work up to the twentieth floor and eight hundred men at work, and it is exptected that it will be ready for occupancy within four or five months.

Occupying a site at the southwest corner of Michigan Avenue and Jackson Boulevard, 161 by 171 feet, the structure will rise 475 feet above the street, covering an area of 27,531 square feet of land will develop 509,176 square feet of floor space of which 425,000 square feet is usable office space. In both general structural design and in arrangement of floor plans, the plans for the Straus Building are regarded as exceptional. The changes from the original plans of Graham, Anderson, Probst and White, architects, suggested by the commission of experts were few but they decreased the cost of the building by $250,000 and added approximately $25,000 a year to the rental income.

The main structure will rise twenty-two stories in the form of a hollow square surrounding a light court. The central portion of the Michigan Avenue frontage, about eighty feet in width, will be slightly set back above the twenty-second story and be continued as a tower reaching to a height of thirty-two stories. This set back develops a very interesting and distinctive architectural feature which breaks the Michigan Avenue front and lends a note of individuality quite unlike anything else in Chicago. Indiana lime stone is being used, similar in character and color to that so successfully used in the Straus Building of New York, one of the handsomest banking houses of the country. Above the sixth floor, the stone is to be laid in regular squares with perpendicular lines which have a tendency to emphasize the height. In general treatment the best examples of Florentine architecture are being followed, a type to which this stone set with deep joints is particularly adapted. The seventy-eight caissons which support this huge structure reach 115 to bed rock, two of them being 11 feet, 9 inches in diameter. More than 12,000 tons of steel are required and in order to secure prompt delivery it is fabricated in seven mills in five different states. Two great girders 55 feet long and 11½ feet high and weighing 68 tons each will support the tower structure of the eastern facade.

In the new building will be located one of the largest safe deposit installations in Chicago, providing for 20,000 boxes. The rentable area on the ground floor will be occupied by shops with attractively display windows on Michigan Avenue and Jackson Boulevard. There will also be located on the street floor two building entrances, one on Jackson Boulevard and one on Michigan Avenue. The great arch entrance on Michigan Avenue leads to the bank floor, which, together with the third, fourth, fifth and sixth floors, will be occupied by S. W. Straus

THE STRAUS BUILDING, SAN FRANCISCO
LEWIS P. HOBART, ARCHITECT

& Co., for the conduct of their investment bond business. This arch will be one of the outstanding architectural features of the new building. It will probably be the largest building penetration of its kind in the city, extending four floors in height. The glass panels in the arch will be covered with a bronze tracery of exquisite design. The banking room, which will be one of the largest and most beautiful in Chicago, will extend the full depth of the lot, 171 feet, and 135 feet in width, with a ceiling height of 42 feet. The room, which will have a heavy marble treatment with a bronze coffered ceiling, will have two mezzanine floors, the lower exposed to the banking room and the upper enclosed.

For the accommodation of the Pacific Coast executive offices of S. W. Straus & Co., and to house its San Francisco organization, the building at 79 Post street, San Francisco, is being remodeled and is hereafter to be known as the Straus building of this city. Two new floors are being added and the whole face of the building being rebuilt. The interior floor plan is being changed, also, in such a way as to utilize the floor space to better advantage. While sales forces of this concern are maintained at Los Angeles and San Francisco with subsidiary agencies in Seattle, Spokane, Oakland, Long Beach and San Diego, the loan department, legal department, and the educational department of the Pacific Coast organization are administered from the Straus Building in San Francisco.

* * * *

Building a 32-Story Skyscraper in 16 Minutes

A flower that is several days in the blooming will blossom forth on the picture screen in a few moments . . . insects will hatch within a wink or two of the eye.

Now by the magic of the cinema a 32-story skyscraper will rise in one reel—sixteen minutes.

It has been tried before but not with great success. In the past the trouble has been that when different scenes were made the camera was in slightly different positions. A fraction of an inch difference in the position of the camera was so magnified on the screen that the general result was pretty much blah.

But when the Straus building on Chicago's Michigan Boulevard was started, the Rothacker Film Company was in a position to insure the desired results.

In Grant Park across the Boulevard a mound was thrown up. Stilts were driven into this mound and on top of the stilts the camera house was built. The tripod was cemented to the floor of this house and the camera was bolted onto the tripod so that it could not move a hair's breadth. This movie equipment will remain as it is until the building is completed.

Every morning the cameraman mounts to his house on stilts and cranks a few feet of film.

Next year engineering school students can behold a $15,000,000 building go up in sixteen minutes. The film will also be available to engineering and architectural organizations, contractors and building owners.

Specification Writing—a Highly Specialized Undertaking

By WILLIAM F. WISCHMEYER*

IN the contractor's office the estimators call specifications "the vaudeville side of architecture" because of the humorous expressions contained in them. The estimator invariably makes notes of the contradictory things he finds and with his friends gets together and has a good laugh over them.

First of all, what is a specification? Most specification writers define the documents as a description of materials and workmanship entering into the production of a certain type of structure. We learn from this that materials and workmanship form the backbone of the document, while general divisions and note govern requirements of certain specification work. In discussing the subject it might be well to follow the order in which the specifications are written. First, general conditions; second, materials; third, workmanship.

Speaking of general conditions, I have always liked to define general condition as "obligations" which must be assumed by the owner, architect, and contractor respectively. It has frequently been the case that general conditions were used as a club to brandish over the head of the contractor. Many architects use lengthy conditions which incorporate much that rightly belong to the contract agreements, and frequently the conditions of the two documents clash.

The two instruments should be complementary to one another, and should agree in both spirit and letter. We have found that to incorporate a phrase in our contract stating how monthly payments should be made, referring to such and such an article in the general conditions, always take care of the situation no matter what conditions govern. Often paragraphs are written into the specifications in which the architect binds himself to certain obligations he has no right to assume, later neglecting them, and as proceedings ensue he becomes a burden instead of a protection to his client.

Many architects insert in the general conditions paragraphs which safeguard against many errors or omissions on the part of the contractor, so that the contractor loses interest in work. In my opinion this is unjust, and I have known occasions while estimating when both sub-contractors and general contractors have refused to submit figures due to the unfairness and the confusion in the general conditions. Entirely frank and clear general conditions, without any intention of putting it over on the contractor, never fail to bring in a correct bid. In other words, the general conditions should express the obligations of the contractor and state what he is to include in his estimate in addition to materials and workmanship under the various headings and subheadings.

We have analyzed thany things in condensing our general conditions to about four pages. At the outset we state what the owner is obligated to do under these general conditions. He reserves the right to reject any and all bids and to let the work to other contractors, and reserves the right to select contractors, paying a preference. He is to make certain payments and take out and pay for fire and cyclone insurance, and to pay for fuel to heat the building only from the time the plaster is dry.

*Extract from address delivered before the Illinois Society of Architects.

Among other duties, the architect approves samples and materials, examines shop drawings, and issues promptly certificates of payment.

The obligations of the contractors are: He is required to sign a contract to perform the entire work in a satisfactory manner. Where contractors are strangers in the office, we attach our contract form to the specifications, giving them a chance to see the contract they are to sign.

The contractor must select capable sub-contractors only, and shall not settle without the consent of the architect, and shall pay the sub-contractor to the extent of the sub-contractor's interest in the work; he must give the sub-contractor an opportunity to be present and submit evidence in any arbitration; he must be bound to the sub-contractor by all obligations that the owner assumes to the contractor under the general conditions, drawings and specifications; he must be solely responsible for the proper execution of the work and must furnish satisfactory surety bond for a certain per cent of the work; and when required must keep the building heated until the plastering work is completed; must take out and pay for all forms of insurance except fire and cyclone, which the owner will pay for, and be solely responsible for accident or injury to employees or the public.

He must examine and check drawings and specifications, and if discrepancies are found report to architects. He must not require architects to inspect materials out of the city except at the expense of the contractor. He must keep on the work at all reasonable hours a competent superintendent satisfactory to the architect, with full authority to direct the work, receive instructions and give all necessary information that may be required. The contractor must not consider the issuance of certificates of payment as acceptance of the work.

He must keep the building reasonably clean and collect and remove from the premises all rubbish caused by the trades under his contract. He must see that each branch of the work will be installed by persons whose ability to execute it has been satisfactorily demonstrated to the architect. Then there are also paragraphs calling attention to permits, royalties, licenses, fees, municipal ordinances, state laws, and fire insurance bureaus.

That will give you an idea of the general conditions that we have built up in our office. We felt that in this way the contractor would be given the information that would obligate him wherever it would be necessary; he could make a charge against the contract for it, and I believe there is nothing I have mentioned which would conflict with the general contract. We have had these general conditions and our contract, as drawn up, turned over to lawyers, and they brought back the information that they could see no conflictions.

Next in order is materials. Of all the items in the specifications, I consider it of prime importance to mention the exact kind and quality of material desired by its trade name. Another difficulty is the placing of materials in their wrong classification so that there is confusion as to the trade name, and it often happens that the same kind of material is placed under several different headings. I recall once we had to tear down an entire specification and place the materials in their proper positions in order to make an accurate estimate.

Right here I might mention what I think to be some of the qualifications a specification writer should have. He should be well versed in building construction. This requires constant study and a complete and

comprehensive catalog file. An architect or designer will have a superficial acquaintance with materials and will use certain materials in design which will not weather well, and it should be the privilege and duty of the specification writer to enlighten him on the subject and suggest proper materials. Such co-operation between designer and specification writer will produce the best results, as I know that designers have very little time to go into the quality of materials.

Another important factor is the necessity of keeping in touch with the chief draftsman, gaining through him all of the information required, and seeing that no mistake is made in detailing the work. This supervision will allow the specification writer to investigate the conditions before the final rush to get out the specifications.

The specification writer should keep in touch with new materials and should make it a point to investigate results of those he has used. He should never fail to visit buildings for which he has written specifications. He should constantly keep in touch with the superintendent and consult him frequently about specifications and drawings and seek information about how he might improve his work. He should consult with contractors and sub-contractors, and never refuse to give a few minutes of his time to all material men.

In this connection a good catalog system is of great value. I fear that many of us neglect material men. I appreciate the fact that if we would allow it, they would come into our offices in droves and bother the life out of us. As a rule, I have these men come in to see me at a certain hour, which I must set aside during the day to get acquainted with new materials. The specification writer should know about materials because he writes about the grades and kinds of materials the designer or draftsman places upon the drawing, and as a consequence he must know more about materials than anyone in the office.

Workmanship, as I understand it, means the skill and the knowledge in the placing of certain materials demanded of the workman in order that the work may be executed in a satisfactory manner. In this connection, the specification writer should discuss with the designer the way in which he wants the materials prepared. For instance, the specification writer may say that the job is to be laid in cement mortar perfect to the line, all joints troweled, weather cut, etc. The designer goes out to the job and sees it and then rushes back to say that he had a cut joint in mind and the workmanship has practically destroyed his entire scheme. This does not mean that the designer should be hampered by the specification writer or chief draftsman, because the design should be studied from every angle before being condemned as being impractical.

How does the specification writer gain this information as to workmanship? First of all, he must be familiar with materials. He should have spent a few years drafting, several years as a superintendent, and should have made it his business to visit as many manufacturing plants as possible to acquaint himself with the manufacturing processes. Then he should place his confidence with reliable contractors and sub-contrators so that he can obtain first-class information for them. It is an excellent plan to visit buildings of high-grade contractors and architects and compare them with similar work of contractors of less ability. The specification writer learns much of workmanship by observation. I think this covers most of the important aspects of materials and workmanship.

I want to talk about my method of building specifications from the working drawings. We might at this point consider carefully that the specifications do not serve the architect particularly but that they concern the contractor, estimator, material man, architect's superintendent and manufacturer. Therefore, in writing specifications, these men should constantly be borne in mind. When plans and specifications are ready, the contractor is summoned, given prints and specifications, and is requested to return with his bid at some near future date. If a satisfactory figure is to be obtained, every consideration must be given to the contractor to facilitate his work by describing the work in the most intelligent manner, and fully describing materials in detail as to quality and construction, leaving nothing in doubt. I might mention that I go this far—I refer to catalogs and settle any doubts by referring to an article by its trade name. There have been some questions raised as to this method, but why not refer to an article by its trade name—it saves the estimator a lot of time in looking up catalogs for a thing that fits the general specifications.

I keep in constant touch with the chief draftsman, and when the drawings are approximately ninety per cent completed, I secure a set of prints and a tablet, on which I make a list of general headings in alphabetical order as they occur, placing the name in the lower right-hand corner, and leaving about two or three blank sheets after each alphabetical heading, bearing in mind the trades engaged in the work.

In dealing with materials which enter into the work, I select my material and place a note on the drawings as to which material has been decided upon, making sure that the information is placed on all sections and in plans and elevations to explain the work more thoroughly. I do not allow draftsmen to place notes on the drawings; unless they are requested to do so by me. These sheets of notes which I make are to be kept as record sheets, and my idea in doing this is to avoid conflict after collecting materials in their proper headings on these sheets. After collecting these various materials properly, I assemble the sheets in the order I wish to classify the specifications, numbering with red pencil the notes in the order I wish to call attention to them. I then proceed to dictate the first draft of the specifications, requesting the stenographer to leave plenty of margin for corrections and additions. These sheets I treasure.

In the first paragraph of each heading I call attention to the general conditions. Following this are notes such as alternates, allowances, etc., calling the contractor's attention to items specified in other branches of the work, and under these particular notes the question of hoisting materials is decided. We usually specify that the contractor must hoist all materials at the building or furnish hoist and power, and the sub-contractor is to place the material on the hoist and remove it at the proper floor level. The sub-contractor readily sees he has nothing to do with his material but bring it there and deliver it to the hoist.

The question of work, or scope of work, or work included, is next discussed. The estimator's attention is called to all work specified under this particular heading, placing it in the order as I have numbered the items in red pencil on my notes. The various materials are assembled in order so that when the contractor takes off his quantities he finds his materials all listed in one place and not scattered throughout the specifications.

I next mention workmanship, stating the quality of work we expect in the type of building to be erected, and bearing in mind that a warehouse is not a hotel or a residence and should not require the same quality of workmanship.

Following workmanship, I treat the items under extent of work and describe in detail materials and methods of construction. In carpentry I include the work in general pertaining to carpentry specifications; then from my list of notes explain in detail materials and workmanship in various items. I may discuss the joists and describe them in detail, but I try as much as I can to follow the job through as the work progresses in the building. The estimator likes best to take it off that way.

Under cabinet work, marble work, tile work and similar materials, I specify general items under their proper heading, such as trim, base, architraves, picture moulds, etc.

* * * *

Charming Home Interiors

By E. B. VOCKEL

THE present style of home interiors requiring for the most part very little woodwork, is a delightful invitation to the architect to give play to his originality in this direction. The opportunity to employ a beautiful hardwood for his trim is not to be overlooked when it can be done for practically very little extra cost.

Consider what the woodwork of a room ordinarily consists of:— a small base, door and window casings, and picture mouldings. This requires say one or two hundred feet of lumber. The cost of milling the hardwood is about twice that of pine. The amount of hardwood itself required is so small that the architect will not have to hesitate on that score.

In case built-in features are added, book cases, sideboards, mantels, etc., in keeping with the trim of the room, they are of course far more practical when made of hardwood, which is durable as well as beautiful. This in reality means to the owner genuine hardwood furniture installed in the home at an exceedingly moderate cost.

The first thought connected with hardwood, that of high value, is quite correct; however, with the style of trim now in vogue it is possible to obtain this high value at comparatively moderate cost. It is quite true that the touch of hardwood trim adds distinction and value to a home not only for the time being but for years to come. It is a lasting monument to good taste and excellent judgment.

For pretentious mansions where the large rooms are often panelled and show elaborate carvings, hardwood is used as a matter of course. However, the charm of this material may be evident in the simpler lines of even the most modest bungalow, where its beauty and lasting qualities are equally appreciated.

The woods appropriate for home trim run all the way from the ever fashionable walnut, mahogany, quarter sawed and plain oaks, to the newer woods, such as Hawaiian koa, Philippine mahogany and Jenisero, and the soft tans of Southern gum.

The vista through beautiful hardwood French doors, in keeping with the trim of the room, is one of incomparable luxury—in fact the utmost in home interiors.

Some Interesting

French Doorways

PHOTOGRAPHS BY

R. H. BICKEL

TAKEN ESPECIALLY FOR

The Architect and Engineer

HEAVY WOODEN EIGHTEENTH CENTURY CARVED DOOR
HOUSE IN THE BOULEVARD STREET, GERMAIN, PARIS

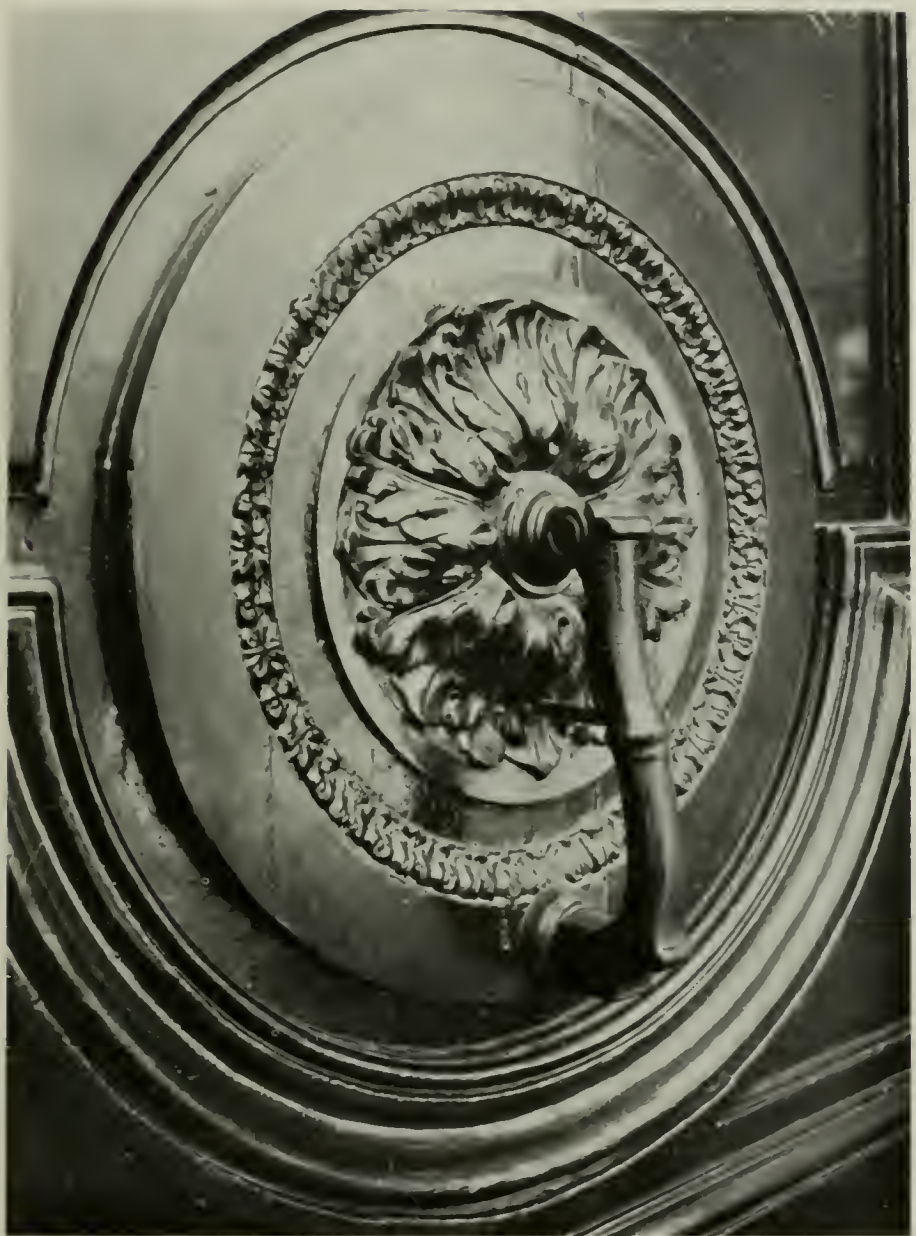
ONE OF THE FINEST DOORS IN PARIS; POLISHED HARD-WOOD; HOUSE NEAR THE BRITISH EMBASSY, PARIS

OLD HOUSE IN BOULEVARD STREET, GERMAIN, PARIS

Simple Design, Double Entrance and Panels; Empire Period; Carved Stone Supports and Bronze Grill Balcony

EMPIRE PERIOD DOORS AND GRILL; OLD HOUSE IN THE RUE DE L'UNIVERSITIES, PARIS

GRILL DESIGN — SEVENTEENTH CENTURY
HOUSE NEAR THE BRITISH EMBASSY, PARIS



ORNAMENTAL KNOCKER: EARLY EIGHTEENTH CENTURY; OLD HOUSE IN THE RUE DE L'UNIVERSITIE, PARIS

Vital Points in Specifications

By IRA T. MARTIN, Consulting Mechanical Engineer

WITH building costs at the peak, an ever increasing housing demand and a tax rate that is by no means a negligible factor, it is little wonder that the public in general is vitally interested in every item that enters into the cost of construction. In order to establish confidence, which is the basis of success, every factor entering into the building program should welcome the spotlight just as the artist who compete for the favor of his audience. People in general are willing to pay the price if they have the confidence that the price is right. Not the least in the factors that go to make up the building program is the architect and for the moment as he makes his appearance, let us direct the spotlight on his activities that we may watch his step, not from the standpoint of criticism but to determine, if possible, just how far this factor enters into the cost of present day construction.

One might, at first glance, be inclined to the opinion that as the architect's compensation is usually a fixed percentage of the contract price and the contract usually being awarded to the lowest responsible bidder, that this would automatically eliminate the possibility of extravagance from this source; such, however, is far from being the case.

The architect is usually of an artistic temperament capable of portraying to others through the medium of sketches, drawings and written specifications, his ideals; both as to utility and artistic beauty. In order to execute these ideals it is usually necessary for him to employ specialists in the various technical lines such as strength of material, heating, ventilating, plumbing, electrical work, etc. If artistic beauty and utility were the only factors entering into the problems the solution would be comparatively simple. Such, however, is not the case. The architect assumes the responsibility of protecting the owner's interests from first to last and, to properly perform this duty, involves many intricate problems. In addition to the conception of a suitable structure his task is that of general business manager. In this capacity he must check accurately the work o f all his subordinates for he alone is held responsible for results. Any statements such as, "I leave that matter entirely to my assistant," or, I have not time to investigate this matter," are marked signs of inefficiency as it leaves the builder at the mercy of a third party whose qualifications have been judged usually by the architect. On the contrary, the architect who prides himself in his familarility with details, showing consideration to builders, as well as to contractors and material dealers, thereby creating mutual confidence, shows marked evidence of ability to get results.

Modern specifications are drawn presumably for the protection of the owner, leaving the contractor and material dealers to look out for their own interests. This, they usually do by studying the personality of the architect, or (if he is the kind that "leaves it to his assistants") then the personality of his assistants, adding or deducting accordingly as the case may be. Thus the 5% overbearing architect may easily become a 15% architect or the 5% architect who permits inferior work or materials to enter into the construction, may be even more expensive.

Competitive bidding is one method of establishing confidence in right prices but this again is a delusion unless the competitive bids are based on definite specifications setting forth the RESULTS to be accomplished and the GRADE OF MATERIALS to be used. When this is done, the ingenuity of the manufacturing and industrial world is at the service of the builder. Narrow contracted or indefinite specifications indicate lack of knowledge or decision on the part of an architect which is a factor to be reckoned with by the contractors and paid for by the builder.

Possibly the most unexcusable practice on the part of an architect or engineer is the specifying of mechancial details. Such specifications may be made with the best of intentions, nevertheless, they are vicous in their appearance and tend to breed distrust in every one dealing with the situation. To say the least, this type of specification is bound to be expensive to the builder. Monopoly is not condusive to economy. Common sense teaches that if material or equipment is specified exclusively, the profit will be liberal and it matters not what becomes of this profit, the builder pays the profit plus the architect's fee on the access.

Manufacturers of materials and equipment in the United States who have weathered the industrial and financial storms of the last thiry or forty years; whose products have stood the acid test of durability under years of satisfactory use, are deserving of every consideration. They form a vital part of our building program, a fact well recognized by the building public. It is little wonder that such manufacturers are combining to combat the inroads of EXCLUSIVE specifications, not alone in the building lines, but in general equipment lines as well. Engineers for municipalities are fast learning the value of specifying results rather than mechancial details, requiring each manufacturer to state specifically and in detail what he proposes to furnish, guaranting the results specified by the engineer.

There still remain, however, a few architects and engineers who have failed to see "the hand writing on the wall." Reliable architects are constantly seeking to gain official recognition of their profession and much progress is being made along these lines. The greatest step forward will be standardization of specifications permitting responsible manufacturers to compete strictly on the merits of their goods. This means confidence in the architect, confidence in the manufacturers, confidence in the purchase and confidence in the justice of official recognition in the architectural and engineering profession.

* * * *

The Importance of English in Landscape Architecture

By Professor JOHN WILLIAM GREGG
Member American Society of Landscape Architects

LANDSCAPE Architecture is a fine art which has in all periods and countries found its fullest expression in an age marked by a high development of culture. Because of this, as well as because of the detailed, technical relation between landscape architecture and literature there is no other fine art which can be with more difficulty disassociated from its literary background.

The landscape architect in the ordinary practice of his calling deals with such little understood ideals and must constantly seek to correct

so many false ideas that he should make use of every possible means of expression. The rendered drawing, the construction plan, the technical specification are scarcely ever sufficient without the written description or the verbal explanation. It is thus quite evident that the well qualified landscape architect in an English speaking country should have more than a passing knowledge of English literature, and more than an average skill in the use of written and spoken English. The two greatest artists in the landscape history of America, the elder Omsted and Charles Elliot, offer very definite examples, if such are needed, of the great value of skill in the use of English and inbred cultural training in English literature. Had these men lacked these attributes, how much we of today would have lost in missing the message they have so clearly left to us of their artistic vision and technical conception of landscape architecture.

The school or department of landscape architecture cannot, therefore, adequately train students without paying a great deal of attention to the study of English. In a full and comprehensive training in this subject students should pursue their studies in the three phases of the language—(a) Composition or rhetoric; (b) Public speaking; (c) Comparative literature. Most of our schools of landscape architecture put considerable stress upon the first of these and have paid some attention to the second; but there seems to have been little or no attempt at the third. In the case of our graduate schools it is probably expected that students shall have put some considerable time on the study of English literature during their undergraduate days.

There has been, during the last two decades, a very steady increase in the acceptance of the idea that correct training in landscape architecture should be given with a background of fine arts, rather than with a background of science as horticulture. This is shown by the rapidity with which our colleges dealing with the subject of landscape architecture are placing landscape training under the auspices of schools of art. Just as we are increasing the artistic background for our profession, we should seek to increase the literary background. Every college or professor in landscape architecture, whether dealing with graduate or undergraduate, should place more emphasis upon the study of English, not only in English composition or writing but upon English literature or reading. In English as in landscape design the surest way to increase ones own creative and critical ability is to study the work of masters.

For a normal four-year undergraduate course in landscape architecture, English composition should be required for at least two full years. A course in public speaking should cover a third year and a course in the study of English literature with special reference to the writings of all ages which deal with the arts and especially with the landscape art, should be studied during the final year.

For a graduate landscape school, training in English literature should be a prerequisite and a familiarity with the Latin and Greek classics in the originals might well be required. This is probably heresy in the eyes of the believer in the anti-cultural-scientific-bread-and-butter idea of education, which is so general today.

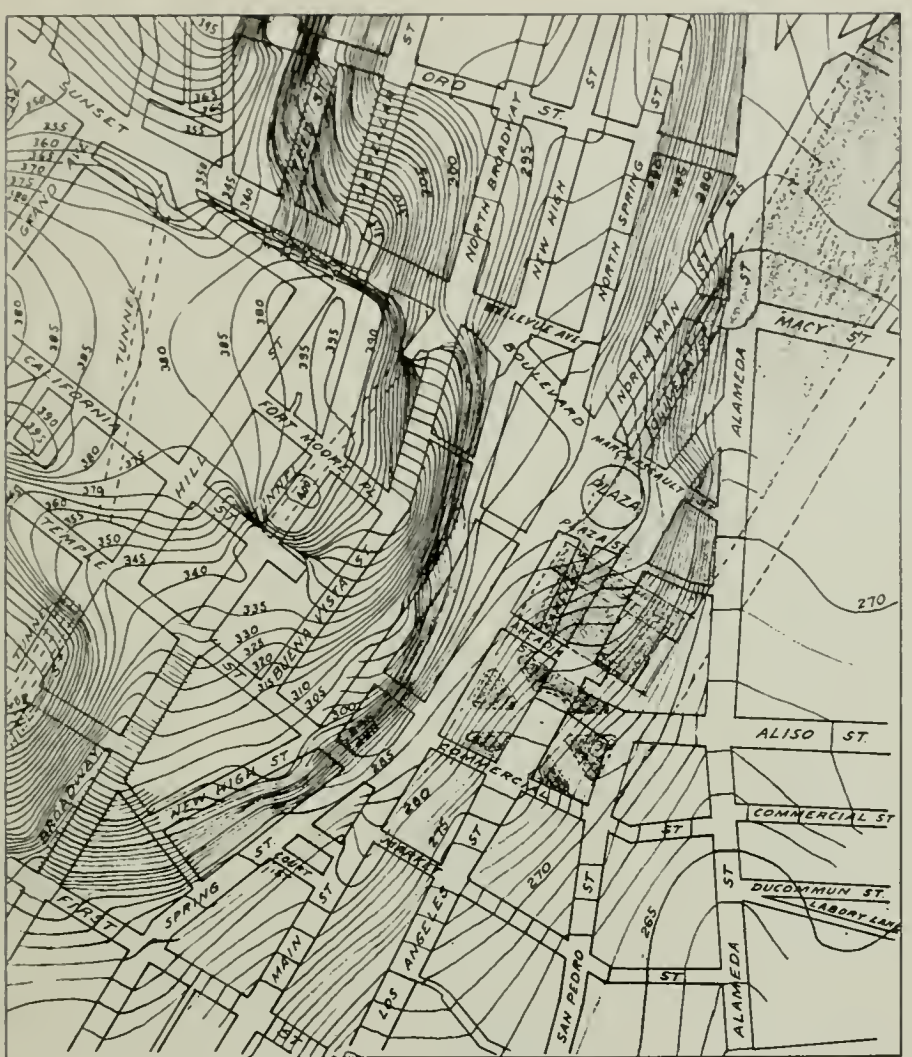


FIG. 2—CONTOUR MAP, VICINITY OF PLAZA, LOS ANGELES

The Los Angeles Union Passenger Terminal

By GEORGE S. HILL

Formerly Structural and Railway Engineer California Railroad Commission

THE several plans for a Los Angeles administration center presented in The Architect and Engineer invariably include a union passenger terminal as one of the elements of the problem.

The California Railroad Commission made a railroad grade crossing and a terminal investigation lasting approximately three years and costing about $40,000 as a result of which the railroad companies entering Los Angeles were ordered to depress the tracks along the river, to join with the city in building suitable bridges, and to prepare plans for a union station at the Plaza. The jurisdiction of the Commission was disputed by the railroad companies and the case was carried to the supreme court of the United States where it is still pending.

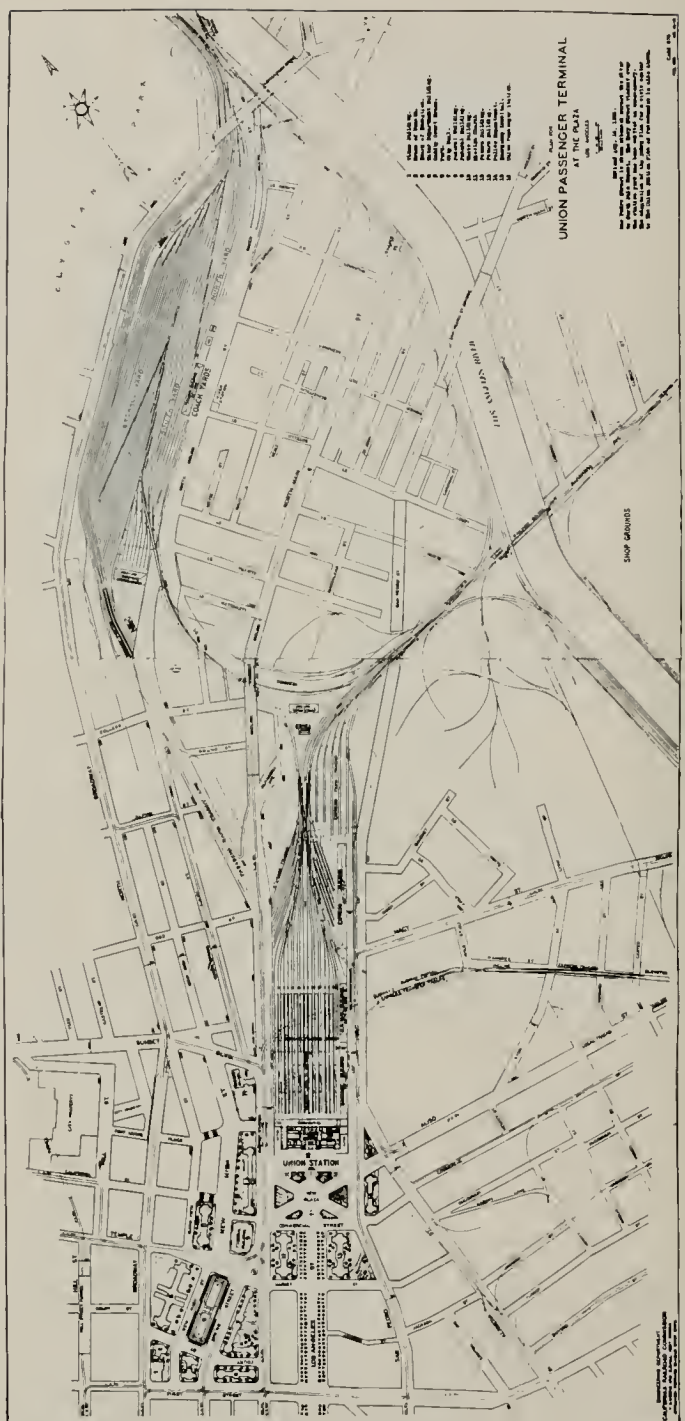


FIG. 1—PLAN FOR UNION PASSENGER TERMINAL AT THE PLAZA, LOS ANGELES

It may not be amiss at this time to explain some of the features which led to the choice of the particular location given in the Commission report, inasmuch as they have such an important bearing on the civic center problem. It is apparent that there are so many more factories affecting the location of the station head house compared with the other buildings of a civic center group that this part of the problem should be solved first, if the station is to form part of the group. With this in mind, figure 1 is presented. As first pointed out by Engineer W. K. Barnard, it was necessary to place the head house as far south as Aliso street in order to permit adequate trackage and throat facilities, to give suitable coach yard connections, and to give direct access to the Alhambra avenue rail entrance and shops. Possible future subways in Main street have also been taken into account.

An important consideration was the fact that Spring, Main, Los Angeles, San Pedro and Alameda streets radiate fan-like from the proposed new Plaza in front of the station providing an effective setting and adding to the convenience. Opponents have argued that the converging streets would cause a congestion of traffic, on the wrong assumption that a dense traffic exists, because of a configuration of streets.

A very valuable and important consideration in the location is the fact that the entire approach and yard trackage may be placed on the ground with a grade practically level. The hump at the Plaza will be graded off to provide a balanced cut and fill. Figure 1 is a further development from that in the Commission report as it provides for extending San Pedro street and eliminates the Macy street viaduct over the yard tracks. It also shows Los Angeles street widened into a mall, a grouping of buildings around the new Plaza and also an adaptation of the Dodge plan for a civic center. It shows the Broadway tunnel eliminated entirely and the area east of it regraded. This will permit the Broadway cars to run directly through to North Broadway without a detour and will thus give two outlets for street cars istead of one. The design submitted in the report was made by Mr. Earl Frary, now deceased, who was one of the artists employed in making D. H. Burnham's plan of Chicago.

Figure 2 is a contour map not heretofore published, showing the area in the vicinity of the Plaza. It presents, we believe, the best of evidence why the terminal should not be placed west of Main street.

* * * *

Accomplish Needed Brick Standardization

Not until a survey had been made was the multiplicity of brick sizes generally realized. The need for dimensional standardization was then apparent and was successfully undertaken at a conference of clay brick manufacturers, engineers, builders, and others interested. Two sizes of face brick were retained, and one for common brick. The face brick sizes are: rough brick, 8½ by 2½ by 3¾; smooth brick 8 by 2½ by 3⅞. For common brick the standard size is 8 by 2½ by 3¾.

* * * *

They Don't Miss the Five Spot

Four bricklayers at Larchmont, N. Y., states a news dispatch from that city, were fined $5 each for working on the Sabbath. "That's all right," they said as they peeled off the bills. "Counting the double overtime, we make $36 for every Sunday's work."

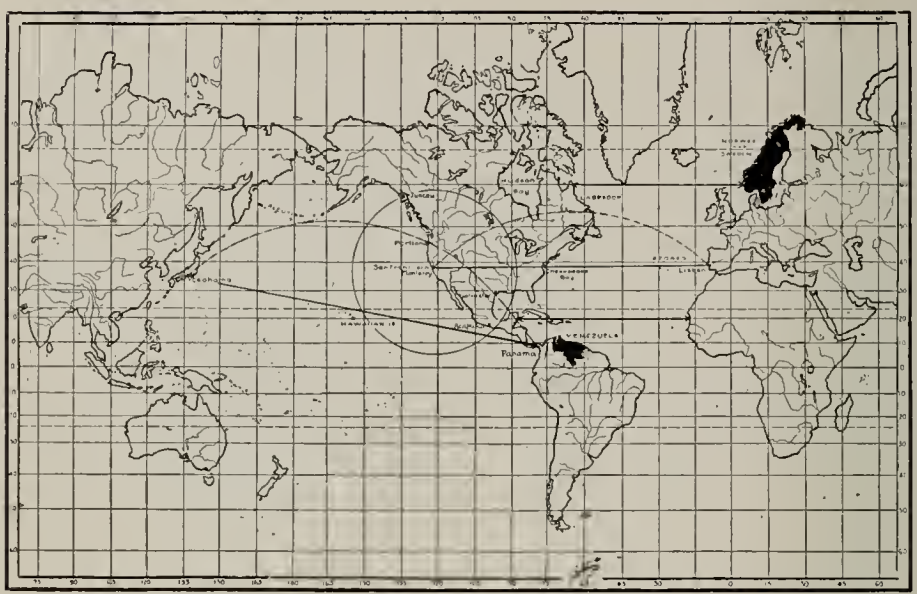


Figure 1.—Mercator's Chart of the World. Note on this misleading map that Acapulco, Mexico, seems to be nearer to Monterey, California, than does Janeau, Alaska; that Africa and Yucatan are as close to each other as Norway and Labrador; that the area of Venezuela seems to be only one-third as great as the area of Norway and Sweden. Then look at the Butterfly map below and see how these impressions are corrected by a true map drawn to the same scale.

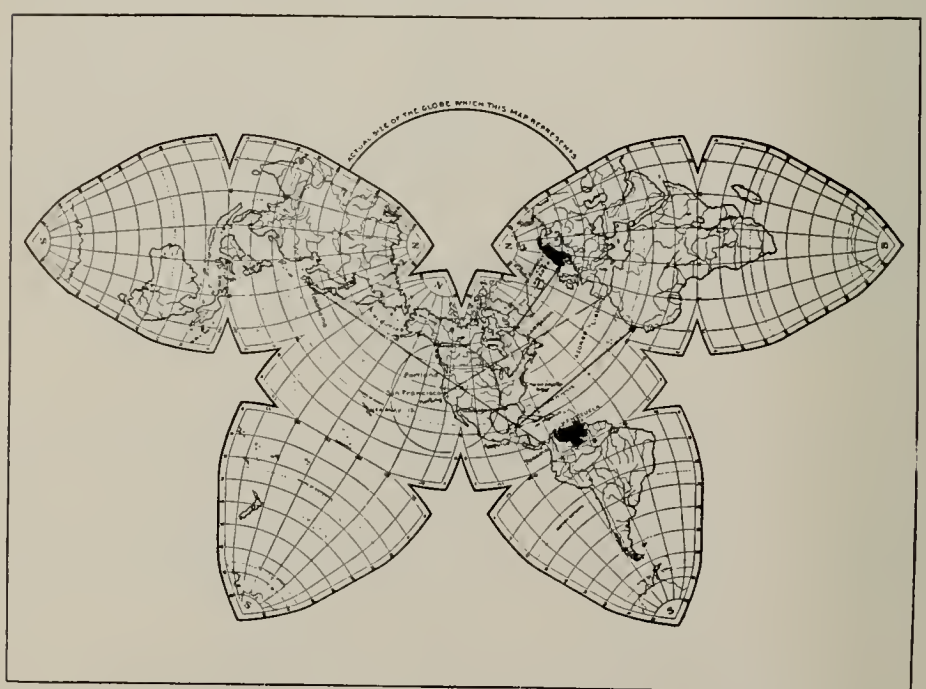


Figure 2.—Map of the World on the Butterfly projection drawn to the same scale as the Mercator Chart shown above. Note that when shown in their correct relations, Janeau, Alaska, is much nearer to Monterey than is Acapulco; that relative distances are correct, and that straight lines follow the same path on the map as great circles drawn on Mercator's chart, and the area of Venezuela is in reality much larger than the combined area of Norway and Sweden.

The Butterfly Map of the World

By B. J. S. CAHILL, F.R.G.S.

IN the early history of this country when people thought much more of their State and much less of the Union, as we now understand it, the great Alexander Hamilton coined a memorable phrase and voiced sound statesmanship when he told his countrymen that they must "learn to think continentally." The advice was good and we and others have followed it. But now the world needs to go further, so much further indeed that in comparison Hamilton's advice sounds almost parochial. The time has come when mankind **must learn to think planetarily.** We must advance from the idea of fifty odd states on this continent welded into one, and consider the fifty odd nations marooned on this one planet we call the world. We have got to live on it together and if we don't organize so that its affairs are intelligently directed to the greatest good of the greatest number, what Ambrose Bierce predicted in "Ashes of the Beacon" may actually come to pass, and both man and his civilization may perish and disappear.

This thought of world order is in the air to an extent few of us realize. It has nothing very definite to fasten on to at present, but I predict the occasion will arise both soon and suddenly . . .

Planning for World Order and International co-operation means due consideration of the problems, resources and needs, not of a group of nations, but of all the nations of the entire world. And the first requisite for statistical studies involved in this survey is an adequate plan of the planet we live on: one drawn to a uniform scale without distortion, or disruption of the land, and absolutely impartial, so that no one national territory is shown more advantageously than another, and all get an equally square deal.

Mercator's map of the world was essentially a sea chart, and never was meant for anything else, and to this day only a navigator can explain its real purpose; what it achieves and how. It is doubtful if any one reading these lines, not a navigator, could tell clearly what Mercator's map does that is useful to navigators. The answer is very simple: "it rectifies the loxodromic curve" or straightens out the rhumb line. And the map was designed expressly to do this and to do nothing else.

And now to explain. Assuming a compass to point due N. and S. (which it doesn't exactly) on a moving ship the needle will always point in the same direction as a meridian of longitude, and at right angles to parallels of latitude. If a mariner therefor wants to reach a port due North, South, East or West he sails **with** the needle or at right angles to it and, other things equal, he will eventually arrive at his destination. But very few sea routes run in these two directions. The vast majority are between the two, the course (Greek dromos) is oblique (loxos). Now if our skipper leaves Lisbon, say for New Foundland, his direction will be about W.N.W. But on any map which shows the meridians radiating from the pole, to cross each at the same angle is to describe a spiral curve. You can illustrate this very easily on an open umbrella with a chalk line crossing each rib at a constant angle. By joining these short straight lines you will get a spiral which finally coils around the ferule, and, mathematically speaking, keeps on coiling round the center of it for ever, never actually reaching it. Thus in spite of the fact that a globe is the most perfect world map it will not in any way

enlighten one as to what constant compass direction will lead from Lisbon to St. Johns. The true compass direction being a curve, our skipper must aim South of the apparent direction, but precisely how much South?

It can be figured out by aid of the calculus, but the calculus was not invented in Mercator's time and what hardy but illiterate captain could be expected to master the higher mathematics even in our day? Mercator solved this puzzling problem for mariners by deliberately falsifying the surface of the globe. He made the meridians all parallel, where in reality they all converged and, then (since one lie, as it were, called for another), he made the parallels also straight and increasingly far apart as they neared the pole in the same proportion. But this double and carefully calculated falsification had the truly magical effect of transforming all the loxodromic curves into perfectly straight lines. All that a navigator had to do now was to rule a line across the then new style map between his port of sally and his destination and this line gave the correct angle to cross any and all meridians, that is the correct constant compass direction. Now it becomes clear what Mercator's deliberately falsified map was made for. Very little navigation is now done by log and compass and therefor it is all the more illogical to go on using it for the very purposes it is notriously unfitted for.

Just where this chart is misleading and false can be seen on the cut. A few examples are selected, they can be added to indefinitely. First as to areas; Canada is not twice the United States, nor are the United States noticeably larger than Australia. North America is not larger than Africa, but if we exclude lakes and islands, actually smaller than South America, while Africa is three million miles bigger than either of them. Greenland is not three times Australia, Australia is three times Greenland; nor is the Scandinavian peninsula three times Venezuela, but very considerably smaller than Venezuela and so on.

As for distances they are as erroneous as areas. On Mercator's map the distance from Yucatan to West Africa seems the same as between Norway and Labrador at latitude 60. The first is over 4,000 miles, the second over 2,000 only.

As for the short routes across the world, Mercator's map is a mine of misinformation. Anyone looking at it would naturally suppose that an airship leaving the Panama canal for Japan would set out across the Pacific, pass over the Hawaiian Islands arriving a little South of East. As a matter of fact the direct great circle route does not go out into the Pacific at all but across the Gulf of Mexico to Yucatan, Galveston, Salt Lake, some hundreds of miles East of San Francisco and not out into the Pacific until we get North of Portland, Oregon: thence to the Aleutian Islands, arriving at Japan from the Northeast! Similarly, a beeline to Lisbon does not pass all through the United States via Chesapeake Bay. Strange to say, most of the trip would be through Canada via Winnepeg, Hudson Bay and Labrador, way to the North of Newfoundland, reaching Lisbon from the Northwest.

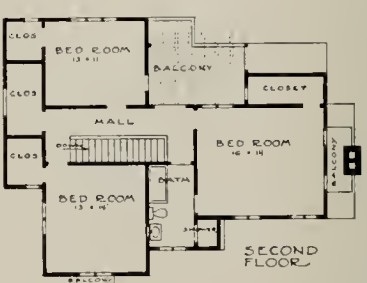
By comparing these areas, distances and directions on Mercator's chart with the same items on the Butterfly map it will be seen how the latter corrects them all by its close conformity to an actual globe. In fact on actual geographical globe, if drawn on a rubber, rather than a papier maché ball can, if cut on the lines of the Butterfly map be laid out flat under glass. When the glass is removed the flat map curls itself into a perfect sphere again.

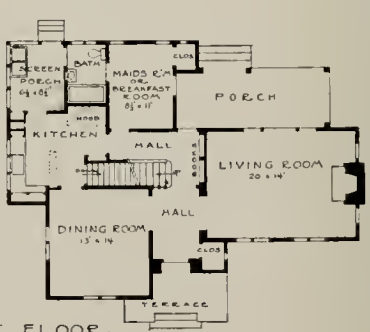
THREE DESIGNS OF

LOS ANGELES HOMES

By ERNEST IRVING FREESE, *Architect*

ERNEST IRVING FREESE · ARCHITECT.
4675 HOLLYWOOD BLVD.
LOS ANGELES. CAL.

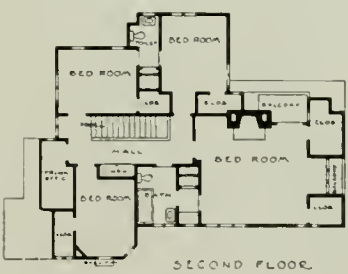


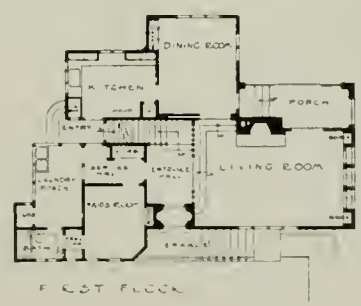


HOUSE for
MR. F. A. ALEN.
LAFAYETTE SQUARE,
LOS ANGELES. CAL.

PUBLIC LIBRARY

ERNEST IRVING FREESE · ARCHITECT
4615 HOLLYWOOD BLVD.
LOS ANGELES, CAL.





Curtains and Proper Hanging

By JULIA W. WOLFE in American Builder

FASHION decrees changes in curtains as in clothes; and following the dictates of hygiene, heavily-lined curtains of velvet, damask, brocade, etc., have made their way for lighter, gayer and less severe draperies for windows and doors. Light-weight curtains are more easily kept clean and more suited to our modern methods of furnishing. Even the cost is a matter of congratulation compared with the price of plush curtains a decade ago.

To begin with, the hangings of a window should be considered from two points of view—their ordinary appearance and their appearance when drawn across the glass. Also with net or lace curtains hung close to the glass, their appearance from outside the home must be considered. The main thing is to have all the windows on the front of the house uniform in treatment, otherwise the appearance is spotty and restless. Careful treatment as to detail is essential if the finished result is to harmonize with and give the final touch to the interior as well.

While the selection of the material for window hangings is a matter of personal taste and requirements it requires discrimination, too. Expensive materials are quite out of place in rooms where the furniture is inexpensive. It may be noted, that while plain walls will carry either a plain or figured material, figured walls should, with a few exceptions, only have plain hangings. It always pays to purchase good quality of material for the life of curtains is usually from two to three years. Curtains also have constant handling and are subject to the influence of light, which is destructive also. For this reason it is often best to line them, or even interline them. Lining has the additional merit of giving weight to the curtains and they hang better.

In buying curtain material, the quantity should never be skimped. It is essential to allow for ample fullness. An allowance equal to the width and one-half is usually satisfactory.

As each room in a house has its specific purpose and the curtain should be chosen with this object in view. The windows of detached houses are more easily dealt with than those that are closely overlooked. In some instances this may be overcome by screening, or to use plain or fancy net sash curtains in addition to the ordinary casement curtains. The object is to insure privacy without the loss of light; these need be but for the lower half of the window.

There are both difficult and ugly windows, but there are few that are not improved by suitable fittings. The simplest way of making any curtain is just to have the material gathered on a pole, or rod, so that the curtain falls in front of the window; but this method is not advisable if the window be large, though it may suit a tall, narrow window. Another good thing is to have a valance, which may be plain or fancy in shape. Whether a straight or formal pilmet is used or a gathered valance the appearance of the window is greatly enhanced.

Rods should always be selected with care; those that will not warp, rust and bend are the kind to select. Wooden poles are seldom used these days as curtains are light in weight. Another thing is the number of rings on a rod. Quite commonly two rings are supplied to each foot of rod, which means 12 rings for a foot width. This is not sufficient to prevent sagging at the top when they are drawn back. Hooks or sewn-on rings every four inches will be found more satisfactory.

A new curtain fitting has greatly simplified the hanging of window drapery. Two distinct types of the same runner are made, one heavier and more substantial to take curtains of any weight and a lighter one specially designed for hanging casement, lace or thin fabric curtains. They are made on the same principle. Small wheeled runners travel along a metal rail which is sufficiently flexible to be bent to follow the contour of any window. The slightest touch sets the runners in motion; no dragging or pulling is required. Hence the life of the curtain is prolonged. Spring stops are supplied with the runners, so that they may be placed where required to get any particular effect in draping.

Windows which open inwards can either be fitted to a brass swinging arm which is fixed to the window frame, and so moves independently of the windows, or brass rods can be fitted at the top and bottom of the windows.

All sorts of good effects can be obtained by borders of cretone on a plain self-colored casement cloth, as a casement border to a cretone curtain. The scheme may be striped, worked in alternately with casement cloth or cretone, the stripes of which can be joined by an insertion stitch. A delightful notion is applying motifs of ornament cut from cretone and button-holing them all around on the curtain with cotton or flaxen thread.

Quite a good effect is secured by having long curtains at the outside parts of the window frames and small half-way ones curtaining the intervening window spaces. These curtains may be left loose just gathered onto a rod at the top, or two rods can be used, top and bottom, and though the curtains be gathered onto these, a taut effect should be the result.

* * * *

It's All in the Viewpoint

TEXACO Tips relates that the society editor called on the daughter of a road contractor for a poem on Spring and was rewarded with this bit of verse:

"Sweet verdant Spring is here at last, in pleasing panoply;
And early birds, of sweetest voice, pipe tuneful melody."

As the society editor was leaving the house the contractor arrived and he was likewise asked to express in rhyme his opinion of Spring. It so happened that he had just worn out his fourth pair of hip-boots in trying to locate a road job he had bid on. He wrote:

"The cement shack has sprung a leak,
The grade looks like a bay.
The estimate is very weak,
And Saturday we must pay.

"Twelve cars of rock are on the switch,
Eight more are due tomorrow.
Two motor trucks are in the ditch,
My life is full of sorrow.

"The mules have bogged down belly-deep,
The frogs croak all the day.
The overhead would make you weep,
Oh, Spring, please go away."

THE
Architect and Engineer
Incorporated
Founded 1905 by E. M. C. WHITNEY
W. J. L. Kierulff - President and Manager
Fred'k W. Jones - Vice-Pres. and Editor
G. H. Oyer - - - Advertising Manager
L. B. Penhorwood - - - - Secretary
T. C. Kierulff - - - - - - - Attorney
Associate Editors
Irving F. Morrow - -Architectural Critic
Chas. H. Cheney - - - - City Planning
Chas Peter Weeks - - - - Book Reviews
Emerson Knight, Wilbur D. Cook } Landscape Architecture
Wm. B. Gester - - Inspection and Tests
O. P. Shelley, C. E., F. W. Fitzpatrick } Fireproof Construction
T. Ronneberg, C. E. - - Structural Steel
W. H. Lowe - - - - Roofs and Roofing
Fred'k N. Woods, Jr. - - Rock and Gravel
Chas. Felix Butte - Electrical Construction
J. W. Fricke - - - - School Equipment

Published Monthly in the Interest of the Architects, Structural Engineers, Contractors and the Allied Trades of the Pacific Coast by The Architect and Engineer, Inc.

PUBLICATION OFFICE:
627-629 Foxcroft Building, San Francisco
Telephone Douglas 1828

The publishers disclaim any responsibility for statements made in the advertisements of this magazine.

Terms of Subscription
(Including postage) to all parts of the United States, $2.50 per annum; to Canada 75c additional; to all Foreign points $1 additional

Vol. LXXV DECEMBER, '23 No. 3

GETTING AWAY FROM JAZZ ARCHITECTURE

It is indeed gratifying to note the tendency of architects and builders to get away from the uninteresting, box-like houses, giving us instead homes that at least have some semblance of architectural merit. While the public has not yet entirely signified its full appreciation of good architecture, the newer houses in both the cities and suburban communities give evidence of a leaning toward better design. Unquestionably American small house architecture is steadily mounting to higher levels, which marks a distinct achievement, not only in the cultural life of the people, but in the finest qualities of citizenship.

Good architecture, like good examples of any other art, is eternally good. It is in no way dependent upon changing fancies. The surface currents of public disapproval cannot long persist against the truth that is inherent in good architecture. There were periods when types of Colonial architecture, if not in public disfavor, were at least disregarded, but because they measured up to the best standard of the art, they have always commanded the approval of the discerning, and have never been more strongly entrenched in public favor than today.

* * *

That architectural merit adds dollars to the value of a house is convincingly demonstrated when old homes possessing architectural distinction find a ready sale at good prices, while a poorly designed dwelling is a "drug" on the market. Many bizarre creations are produced by designers who seem to think that when a multiplicity of gables, of projecting rafters and sharply contrasting hues in stuccoes and bricks are achieved, the result is bound to be pleasantly modern and desirable. Investors are finding to their sorrow, however, that this type of house is passing out with the jazz music of which they are symbolical, and some owners will have to do something to their property if they wish to realize on it.

BUILDING FIRE-BREAKS IN BERKELEY HILLS

Official acts of Berkeley, Oakland and other municipalities in the bay region of San Francisco, ordering the construction of firebreaks, patrols in the hills and enlarged water mains, are cited by the California lumbermen as answering the claims of other interests that wooden shingles were responsible for the recent Berkeley conflagration. Berkeley is now heeding the warning sounded fif-

teen years ago, and there is no one in the city who will question the statement that, had these precautions against fire been taken earlier, there never would have been a burned area of fifty blocks north of the University of California campus.

The Berkeley conflagration was started by a grass fire fanned by a north wind. Unchecked, the blaze swept over the Piedmont hills, burning the dry grass, weeds and oil-ladened eucalyptus. When it reached the residence section, it was a wall of flame driven on by a gale. That which had been predicted for years took place and there was no home, no matter of what construction, that remained standing in the path of the fire. The flames were racing along the ground and leaping through the air when they reached the first house that was burned.

Berkeley is already building firebreaks, which stops are to be commended. Furthermore, the city will erect watch towers and establish patrols and the water company has been ordered to lay larger mains. It is significant that, regardless of the anti-shingle roofing ordinance recently passed by the City Council, these protections against fire are to be provided for in the near future, and that the reports of experts regarding the cause of the fire lay the blame on their absence.

Fellowship of the American Academy in Rome

THE American Academy in Rome has announced its annual competitions for Fellowships in architecture, painting, sculpture, musical composition and classical studies. The stipend of each Fellowship in the fine arts is $1,000 a year for three years. In classical studies there is a Fellowship for one year with a stipend of $1,000, and a Fellowship paying $1,000 a year for two years. All Fellows have opportunity for travel, and Fellows in musical composition, from whom an extra amount of travel is required in visiting the leading musical centers of Europe, receive an additional allowance not to exceed $1,000 a year for traveling expenses. In the case of all Fellowships, residence and studio (or study) are provided free of charge at the Academy.

The awards of the Fellowships will be made after competitions, which, in the case of the fine arts, are open to unmarried men who are citizens of the United States; in classical studies, to unmarried citizens, men or women. It should be particularly noted, however, that in painting and sculpture there is to be no formal competition involving the execution of work on prescribed subjects, as formerly, but these Fellowships will be awarded by direct selection after a thorough investigation of the artistic ability and personal qualifications of the candidates. Candidates are requested to submit examples of their work and such other evidence as will assist the jury in making the selection.

Entries will be received until March first. Circulars of information and application blanks may be obtained from Roscoe Guernsey, Executive secretary, American Academy in Rome, 101 Park Avenue, New York City.

Information, Philosophy, Dirt

THE CHICAGO HERALD AND EXAMINER recently carried an article written by Mr. Arthur Woltersdorf under arrangement with the American Institute of Architects. It was inspired by a visit on the part of Architect Woltersdorf to the sanctum of Mr. Herman Matz, vice president of the S. S. Kimbell Brick Company, whose home is in the University Club overlooking Michigan boulevard, Chicago.

Mr. Matz is a whole bureau of information for anyone interested in the construction industry, and the walls of his rooms are banked solidly with great files in which is stored an immense amount of interesting information gathered through long years.

The construction industry knows Mr. Matz because he always has his own good sidelights to play on any issue in any convention or gathering. Fewer know of his intimate and ceaseless study of all that is written about building. It has been the pleasure of the writer of this article to sit before the files, or under the files, you might say, and listen to some of the philosophy which Mr. Matz has wrapped about the building industry.

Therefore it is not surprising to us, says the American Contractor, that Mr. Woltersdorf wrote such a story as he did after leaving the University Club. Mr. Matz drove home to him a new picture of the construction industry and its great-

ness. He always does this, and he is at present working hard to bring about the day when the railroads of the country will recognize that building materials should be classified as building materials and not under the head "miscellaneous." There is thought in this for anyone.

Let me quote part of the most interesting story written by Woltersdorf:

"The room in the University club through whose great windows I am gazing out upon Grant Park reminds me of a medieval castle. Its walls are lined with filing cases and piles of newspapers and magazines, arranged in perfect order for reference. They are like an insurmountable moat, with an opening like a draw-bridge leading to the corridor door. In the middle of the room stands the bed and desk, surrounded by a passage. Here lives and delves Herman Matz, son of Otto Matz, who, for many years, was the architect for the Illinois Central railroad, and who designed Chicago's first great railroad passenger station. He is an economist wedded to a theory which I must present to my readers.

"It involves dirt. There is much talk about the dirt farmer and the importance of agriculture as the one basic industry. Construction is constantly used figuratively. We speak of 'reconstruction—building a business on a firm foundation—something concrete.' Is it not true that literally construction is the other industry that should be given first consideration along with agriculture?

"There are two basic industries—agriculture and construction, the first having to do with the production of food and clothing, the other with production of shelter. Both industries start with dirt—first, with dirt suitable for producing food and the materials of clothing; second, gravel, stone, lime, cement, brick, hollow tile, granite, glass and steel. All of those raw materials are of various kinds of dirt found on or near the surface of the earth, whose value is slight until brought together by labor and direction into some form of construction. The structure then adds to the permanent, physical, tax-paying wealth of the nation. It is as foolish to claim that construction is more important than agriculture as it is to say that the father is more important than the mother—according to Herman Matz.

"It is safe to claim that agriculture and construction, jointly, are the two great basic industries that are the foundation of national life, health, wealth and contentment."

COMPETITIONS

"When Is a Competition Not a Competition?"

In a modern progressive city not many hundreds of miles from Chicago, a four page letter was recently sent, presumably to a few local architects, although later developments seem to indicate that the letter also in some way or other reached remoter practitioners. An outline of the letter follows:

"This Masonic Company was organized for the purpose of erecting a building that will be the home of all Masonic bodies in this city and of our state consistory. The directors desire it to be exactly adapted to the purposes, built within the required amount, adequate for all needs for many years to come and of such architectural design that masons—as well as all lovers of the beautiful and useful, will take pride in it. The question of plan and design is most important. The directors feel the responsibility that is theirs and desire to make no mistakes.

"It is hoped that the co-operation of the architects of our city in developing a suitable design for such a structure may be secured.

"With this idea in mind, the directors have authorized the president and secretary to present the problem before the architects of our city and invite their co-operation, with the thought that the design for such a structure may be developed and crystallized right here at home.

"It is desired that the architect to whom this letter goes study the proposition and volunteer the preparation of sketches that wil lshow how they would develop the plan according to the requirements herein set forth.

"Some time ago when the company owned only a portion of the present site, several architects kindly produced sketches showing what might be done with what we then had. We are very grateful to them for the assistance given, for it was definitely proved that at that time we needed more ground. Thereupon the board acquired and now owns a site of 300 by 140 feet.

"The assistance and co-operation of these architects at that time brought about excellent results and gives the board hopes that their request at this time will also meet with a favorable outcome.

"Competitive designs are not asked for. The plans and designs submitted will indicate to the board the qualifications of the architect submitting them and will

demonstrate whether or not the architect has grasped the ideas herewith submitted and has been able to work out a beautiful and economical design, with all features of the various rooms, their size, use, etc., nicely co-ordinating.

"It is possible that one or more architects will eventually be asked to develope their ideas into the final design."

Then follows data relating to some old buildings on the site and suggestions regarding their disposition or removal; detailed list of the inclusions; equipments, the many features, rooms, sizes, accommodations, capacities, construction system, etc., etc., and the cost limit, $500,000. "If you will be prepared by the first of the month to submit sketches, will you kindly advise the secretary."

The invitation was dated on the eleventh of the month. However, owing to the absence from the city of some of the board a verbal postponement was made and on the twentieth of the next month a second letter was sent to the architects saying: "The directors have decided to allow a little more time in which to complete the plans which we understand you are working on. We will expect all plans to be in the hands of the secretary by the fifth of the month. It is suggested that the name of the architect be left off the plan submitted so that they may be judged irrespective of whom they have been drawn by."

Question. What is the answer? When is a competition not a competition?—Bulletin the Illinois Society of Architects.

Pasadena Competition

The city directors of Pasadena have announced a competition to obtain an architect or architects for the new city hall, auditorium and library buildings to be erected in the new Civic Center for which bonds have been voted and land purchased. Architects invited to submit designs are: Bennett & Haskell of Pasadena and Edwin Bergstrom of Los Angeles, associated; Marston, Van Pelt & Maybury; Johnson, Kaufmann & Coate, both firms of Pasadena; Allison & Allison, Robert D. Farquhar, Myron Hunt and Carleton M. Winslow, all of Los Angeles, and Bakewell & Brown, Bliss & Faville and Willis Polk & Co., all of San Francisco.

The competition has the approval of the Southern California Chapter, American Institute of Architects. Only one design for each building may be submitted by each entrant, but the judges may award any one or more or all three of the buildings to any one entrant. The winners are to receive a 6 per cent commission. The other competitors will receive $1000 each.

The judges are: Messrs. George Ellery Hale, E. O. Batchelder, Stuart W. French, chairman of Pasadena city planning commission, Architect John Galen Howard of the University of California, and a fifth juror to be selected by the competitors.

Los Angeles Competition

The Los Angeles board of public works has named Messrs. J. E. Allison and Harwood Hewitt to represent the Allied Architects' Association and John C. Austin and John Parkinson to represent architects not members of the association, to prepare a program for the competition for a $5,000,000 City hall for which bonds have been voted.

Architect W. B. Faville of San Francisco, President of the American Institute of Architects, has been asked to accept an appointment as the fifth member of the committee. The program will be published in full in a later issue of this magazine.

BOOK REVIEWS

Edited by
CHARLES PETER WEEKS

"Carpets and Rugs," by Otis Allen Kenyon, published by the Hoover Company, North Canton, Ohio.

Altho this book is published to advertise the "Hoover Suction Sweeper," at the same time, it disseminates information regarding the history, design, method of weaving, care and names of rugs and carpets in a very instructive and entertaining manner.

"The Prevention of Vibration and Noise," by Alec. B. Eason, published by Henry Frowde and Hodder & Stoughton, 1 Bedford street, Strand, W. C., London, England.

This book is of highly technical value to engineers for special problems. It is, however, of little use to the building architect or engineer, except for some very unusual problems.

"Towns and Town Planning, Ancient and Modern," by T. H. Hughes and E. A. G. Lamborn, published at the Claredon Press, Oxford, England. Price, $5.00.

This book on town planning, the latest on this subject to be published, is charmingly presented under the headings of: "A Brief Historical Sketch," "Town and Village in Britain," "The Modern Movement," "The Future." Illustrations are numerous, some of them the quaint old plans of early history, and highly instructive. The subject is covered from all points, especial attention, however, being given to England.

American Institute of Architects
(ORGANIZED 1857)

San Francisco Chapter
OFFICERS FOR 1924

PRESIDENT ..... J. S. FAIRWEATHER
VICE-PRESIDENT ..... JOHN REID, JR.,
SECRETARY-TREASURER ..... ALBERT J EVERS

DIRECTORS

GEORGE W KELHAM ..... THREE YEARS
ARTHUR BROWN ..... THREE YEARS
WILLIAM MOOSER ..... TWO YEARS
J. H. BLOHME ..... TWO YEARS
EARLE B. BERTZ ..... ONE YEAR
HARRIS ALLEN ..... ONE YEAR

Oregon Chapter, Portland

PRESIDENT ..... CHARLES D JAMES
VICE-PRESIDENT ..... FOLGER JOHNSON
SECRETARY ..... WILLIAM L. SMITH
TREASURER ..... ORMOND R. BEAN

DIRECTORS

WM. C. KNIGHTON WM. G. PURCELL JOHN V. BENNES

Southern California Chapter

PRESIDENT ..... SUMNER P. HUNT
VICE-PRESIDENT ..... A. M. EDELMAN
SECRETARY ..... CHAS. F. PLUMMER
TREASURER ..... ALFRED W REA

DIRECTORS

C. E. NOERENBERG ..... ONE YEAR
DAVID J. WITMER ..... TWO YEARS
EDWIN BERGSTROM ..... THREE YEARS

Washington State Chapter

PRESIDENT ..... CARL F. GOULD
SECRETARY ..... A. F. MENKE
TREASURER ..... CARL SIEBRAND
FIRST VICE-PRESIDENT ..... LOUIS BAEDER
SECOND VICE-PRESIDENT ..... ROY S. MASON
THIRD VICE-PRESIDENT ..... GEORGE H. KEITH

San Francisco Architectural Club
77 O'Farrell Street

PRESIDENT ..... MARK T. JORGENSEN
VICE-PRESIDENT ..... EDGAR B. HURT
SECRETARY ..... CARL R. SCHMIDTS
TREASURER ..... LAWRENCE H. KEYSER

DIRECTORS

WILLIAM ROWE FELIX RAYNAUD J. B. MCCOOL

Los Angeles Architectural Club

PRESIDENT ..... JESS STANTON
VICE-PRESIDENT ..... SUMNER SPAULDING
SECRETARY ..... J. C. SIMONS
TREASURER ..... PAUL PENLAND

DIRECTORS

D. WIKINSON W. S. DAVIS C. A. TRUESDELL, JR.

California State Board of Architecture

Northern District
Phelan Building, San Francisco

PRESIDENT ..... CLARENCE R. WARD
SECTY. & TREAS. ..... SYLVAIN SCHNAITTACHER
233 Post Street
EDWARD GLASS JOHN J. DONOVAN JAMES R. MILLER

Southern District
Pacific Finance Bldg., Los Angeles

PRESIDENT ..... WILLIAM J. DODD
SECTY. & TREASURER ..... A. M. EDELMAN
JOHN PARKINSON MYRON HUNT W. H. WHEELER

Housing Conference Here

Official and business co-operation have been manifested in the plan for holding the International Housing Conference in this conutry in 1924, according to Mr. Willard Reed Messenger, who recently returned from attending the Housing Conference in Europe. Mr. Messenger stated:

"I am deeply gratified by the splendid support extended by the business interests of the United States and by the officials at Washington to my proposal to hold an International Housing Conference in the United States in 1924, carrying out the invitation I extended to the delegates while attending the recent international conference in Europe.

"I have just concluded a series of conferences with such men as Lewis Pierson, President of the Merchants Association of New York, Willis Booth, President of the International Chamber of Commerce, Herbert Hoover, Secretary of Commerce, and Julius H. Barnes, President of the Chamber of Commerce of the United States, who are contributing their time and effort to the conference plans.

"It is a good test of the efficiency of organized American business, when an idea, international in scope, embracing a wide variety of interests, can be presented, accepted and acted upon by the nation within the period of a few short weeks.

"A number of cities have requested the privilege of entertaining the convention with New York apparently in the lead and Philadelphia active.

"It is now planned that the delegates to the convention will extend their visit to include Philadelphia, Washington, Pittsburgh, St. Louis, Chicago, Detroit and Cleveland.

"During my talk with bankers, architects, officials and engineers in the eight different countries I recently visited, the opinion seemed unanimous that September would be the best month for holding the convention.

"My latest cable message from leaders abroad indicates that that time would be most convenient. Fortunately the handsome and commodious new home of the Chamber of Commerce of the United States in Washington, with an auditorium seating 1,000, will be completed by that date."

Merced Hotel Addition

Architect C. E. Butner of Fresno, is completing plans for a thirty-three room annex to Hotel El Capitan, Merced. The building will be four stories, with large banquet room and two stores on the main floor, and is estimated to cost $80,000. Emille King is proprietor of the hotel.

With the Architects

Building Reports and Personal Mention of Interest to the Profession

Architect Hobart Busy

Prospects are bright for a splendid year in 1924 for Architect Lewis P. Hobart, Crocker building, San Francisco. Mr. Hobart will design the new Crocker Bank building at the gore of Market, Post and Montgomery streets, the tower of which will probably be thirty or more stories in height. Working drawings are now being made for a four-story Class A store and office building on Market street, adjoining the Chronicle building, also owned by the Crocker Estate, to replace the structure recently damaged by fire. Construction of this building will start under the management of the Dinwiddie Construction Company as soon as the old building has been razed.

Mr. Hobart is also preparing plans for a one-story Class A bank building to be erected in Stockton for the Union Safe Deposit Bank, and which is being designed to carry ten stories later on. Mr. Hobart has also prepared plans for a two-story addition to the Straus building on Post street, between Kearny and Montgomery streets, San Francisco. Plans are in the making in the same office for a million dollar hospital group for a New York client.

Designing Many Residences

Architects Masten & Hurd, 168 Sutter street, San Francisco, have completed plans or are making drawings for houses to be built in San Francisco and the Bay district, totaling in value from $100,000 to $200,000. They have completed drawings for a $25,000 residence in West Gate Park, St. Francis Wood, and for a $17,000 home at Sausalito for Mr. William T. Burney; also two dwellings in St. Francis Wood for the Garden Homes Company, and two $12,000 residences for Mangels Bros., and an attractive two-story stucco residence in St. Francis Wood for Mr. J. Hampton Hoge, at an estimated cost of $10,000. Masten & Hurd are also preparing plans for a fraternity house to be erected on Euclid avenue, Berkeley, for the Del Rey Society to cost $30,000.

Portland Architect Dies

Mr. E. E. McLaran, Portland, Ore., architect, died in that city, November 20, following an attack of heart trouble.

U. of C. Campus Needs

Funds are needed for the development of the University of California campus, according to Professor John Galen Howard, University architect. He declares that all available "artistic sites" have been used for the construction of new buildings, and that some action must be taken to beautify the remaining sites.

"New buildings placed in barren open spaces on the campus would be like gems kept in the kitchen," he states. "Funds are needed to construct backgrounds of trees and shrubs for the structures which will be built in the future."

Strawberry Canyon and the creek running through Faculty Glade have been particularly neglected, he declares. Recent building activities at the University have changed the course of the creek and have filled the canyon with debris.

"The campus should inspire the students by its beauty," Mr. Howard says. "but beautiful buildings in ugly surroundings are like Cinderella in rags."

Elks' Lodge Building

Architects Curlett and Beelman, 408 Union Bank building, Los Angeles, have been commissioned to prepare plans and specifications for a class A lodge and club building to be erected at 6th and Parkview streets, for Los Angeles Lodge No. 99, B. P. O. E. The building will be 26x150 feet, and will cost $1,500,000. The central portion will be 12 stories. It will contain social rooms, dining room to seat 300, lodge room to accommodate 1500, banquet hall and ball room to seat 1500, gymnasium, plunge, Turkish baths, 200 hotel rooms and large underground garage. Plans will be completed and excavating commenced about February 1.

English Residence

Plans have been prepared by Architect O. R. Thayer, 110 Sutter street, San Francisco, for an English type residence to be built in the Lakemont District, Oakland, for Mr. Casson Estes. Mr. Thayer has also prepared plans for an $8500 Spanish type home in the same tract, and for alterations and additions, amounting to $18,000, to a three-story frame rooming house on Tiffany avenue, west of 29th street, San Francisco, for Messrs. Friend and Burkett.

Stockton Office Building

Plans are being prepared by Architects Bakewell & Brown and Engineer C. H. Snyder, 251 Kearny street, San Francisco, for a ten-story bank and office building for the Stockton Savings and Commercial Bank, estimated to cost $300,000. There will be approximately six hundred tons of structural steel in the building. Bids will be taken the early part of January.

Hospital Contract Awarded

Architects Sylvain Schnaittacher and Sam Lightner Hyman of San Francisco, have completed plans and awarded a contract to Barrett & Hilp, 918 Harrison street, San Francisco, for the erection of a seven-story addition to the Nurse's Home at the Mount Zion Hospital, on Sutter street, east of Divisadero, San Francisco. Contract is for $280,000.

Big Hotel for Tacoma

A twelve-story Class A hotel to cost $1,500,000 and to be erected on South Ninth street, from Broadway to Commerce, Tacoma, is being designed by Architect W. L. Stoddard of 50 East 41st street, New York City. The architect is being represented in Tacoma by Mr. Roland B. Borhek, Puget Sound Bank building.

Community Apartment House

Architects Walker & Eisen, Pacific Finance building, Los Angeles, are preparing plans for a thirteen-story Class A community house to be built on the northeast corner of Yucca and Vine streets, Los Angeles, for Mr. Edward W. Zaiser. The estimated cost is $1,500,000.

Portland Apartment House

Plans are being prepared by Architects Claussen & Claussen, Macleay building, Portland, for a large frame and stucco apartment house to be built on Hawthorne avenue, Portland, for Messrs. Turner & Hendrickson. Cost is estimated at $100,000.

Additions to Hotel

Architects Reid Bros., California-Pacific building, San Francisco, are preparing plans for an extension to the ballroom of the Fairmont Hotel. Preliminary drawings have also been made for a two-story addition to the same hostelry.

Women's Dormitory

Plans are being prepared by Architect Myron Hunt, Hibernian building, Los Angeles, for a women's dormitory at Occidental college, Eagle Rock, to cost $100,000.

Personal

Architect W. S. Hebbard has moved his office from 664 I. W. Hellman building, Los Angeles, to suite 534 in the same building.

Architect Orville L. Clark has moved his office from 923 Chapman building, Los Angeles, to suite 517 in the same building.

Architect F. A. Noyes, Jr., 1022 California building, Los Angeles, has returned from an extended tour of Europe, where he visited many of the important cities and countries.

Architect H. B. Watson, formerly of Vancouver, B. C., is now in the office of the Edward T. Flaherty Co., engineers, 634 I. W. Hellman building, Los Angeles.

Mr. M. C. Parker, architectural designer, has opened an office at room 9, Bank of Wilmington building, Wilmington, and would be pleased to receive catalogs and samples of building material.

Architect William F. Bowen has moved his office from 818 Union League building, Los Angeles, to suite 508 in the same building.

Architects Arthur Kelly and Joseph Estep, associates, announce the removal of their offices from 1201 Van Nuys building to 2512 W. 7th street, Los Angeles.

Mr. George H. Duncan, Jr., formerly with Leland & Haley, mechanical engineers, is now a member of the firm of Caddington & Duncan, consulting mechanical engineers, Phelan building, San Francisco.

Sacramento Elks Building

Preliminary plans have been approved by the Elks Hall Association, Sacramento, for a twelve-story Class A lodge building. The architects are Messrs. E. C. Hemmings and Leonard F. Starks, who have planned a building somewhat different from any large structure on the Pacific Coast, the design being of the so-called step-back type.

Certificated Architects

The California State Board of Architecture, Southern Division, has granted certificates for the practice of architecture to the following: C. Hugh Kirk, 202 Black building; Francis J. Catton, 1445 San Pedro street; Theodore Starrett, 426 Western Mutual Life building; Peter Ficker, 3666 So. Figueroa street, all of Los Angeles.

Scores Chicago Buildings

Denunciation of Chicago's "dressup" buildings, which he says are false and dishonest, was made recently by Mr. Frank Lloyd Wright, architect of the Imperial Hotel at Tokyo, Japan.

The Chicago Temple is "preposterous" and the Wrigley building "just what the name implies," according to Mr. Wright in an interview with a Chicago reporter. Continuing he is quoted as saying:

"With two men out of every three owning an automobile, with electricity, with telephones and every modern convenience, we don't need concentration. The loop ought to be spread out three times its size. Soon there will have to be second story sidewalks, and that means cellars, more gas light. People in Los Angeles have stopped coming down town because of the terrible congestion. What is the city for? The people, of course; then why shouldn't it be a fit place to live in—to be joyful in."

Officers Nominated

Mr. Reginald D. Johnson was placed in nomination for president of the Southern California Chapter of the American Institute of Architects for 1924 by the report of the nominating committee which was adopted at the last meeting. Other nominations were as follows: A. M. Edelman, vice-president; D. J. Witmer, secretary; A. C. Zimmerman, treasurer, and D. C. Allison, director.

Pasadena Bridge

Professor Romero R. Martel of the California Institute of Technology is consulting engineer for the new Linda Vista bridge to be built by the city of Pasadena. Plans are being prepared in the office of the city engineer by Mr. Douglas MacKenzie. The bridge will be 398 feet long and 30 feet wide, with a 6-foot sidewalk on each side. It will be of reinforced concrete construction.

Monterey Hotel

Construction has been started by Messrs. Vukicevich & Bagge, San Francisco contractors, on a five-story reinforced concrete hotel at Monterey, for Mr. Romie C. Jacks. The plans were prepared by Architects O'Brien Bros., San Francisco. The building and furnishings will cost in the neighborhood of $500,000.

Oakland School Building

Plans have been completed by Architect John J. Donovan, Tapscott building, Oakland, for the new Hawthorne school to be built in East Oakland, at an estimated cost of $100,000. The building will be of brick construction. Plans are now out for bids.

Architect Urges Civic Plan

In a recent address before the Washington State Chapter, American Institute of Architects, Mr. Charles H. Bebb, Seattle architect, urged that some plan be adopted for the proper growth and evolution of the city. He called attention to the fact that matters stand just as they did in 1908 when the question of the adoption of such a plan was taken up and later defeated. Mr. Bebb went into detail in his discussion, indicating many unfavorable situations that have arisen by reason of failure to solve the problems that must be met if the city is to develop in a normal way and properly provide for increase of population. He would have a new plans commission appointed that would determine the best location for a civic center, the proper location of public buildings; that would prevent congestion of traffic already existing on certain highways leading into and out of the city and that would expedite the economic handling of public business as has been the result in other great and growing cities.

Traveling Fellowship

Mr. George G. Booth of Detroit, has presented the University of Michigan with $20,000 in bonds drawing 6 per cent interest, the income to be used for a traveling fellowship in architecture. The award will be made on the basis of the student's record and a competition in architectural design. Candidates must not be more than 30 years old, and must be graduates of or have substantially completed the last two years of the four year course in the University of Michigan.

Seattle Architectural Club

The Seattle Architectural Club, composed of draftsmen in the various architectural offices, has its headquarters at 232 Henry building. Regular meetings are held every Monday and Thursday nights for the criticism of Beaux Arts work, the study of which is the primary object of the organization. Mr. McClelland, Mr. Myers and Mr. Gould have aided in criticism of the problems. At present there are about fifteen members.

Architect for Movie "Sets"

Architect Louis Cowles at one time practicing in San Francisco and later in Santa Rosa, is now identified with the Hart, Loring, Wells Corporation, moving picture producers, La Mesa, near San Diego, California. Mr. Cowles is to design the "sets" used as a background in the production of educational pictures. The building trade is asked to send literature, catalogues, etc., to Mr. Cowles at his new address.

Death of Mr. Albert Sutton

The death of Mr. Albert Sutton, formerly senior member of the architectural firm of Sutton & Weeks, San Francisco, occurred suddenly at the home of his mother-in-law in Tacoma, November 24th. While it is more than twenty years since Mr. Sutton practiced his profession in San Francisco, he retained his friendship with many of the architects in the Bay section, who deplore his sudden passing. Mr. Sutton was 57 years of age and a graduate of the University of California. He went to Portland in 1900 to organize the firm of Sutton and Whitney, and later on the main office was transferred to Tacoma.

The firm of Sutton, Whitney & Dugan designed many of the buildings on Broadway, Tacoma, in addition to the W. R. Rust building, said to be the finest office building on the Coast; the National Bank of Tacoma building; Scottish Rite Cathedral, said to be the most unusual bit of architecture west of the Mississippi; Jones Hall of the new College of Puget Sound project; Annie Wright Seminary; First Presbyterian Church, and a number of prominent homes and Portland buildings.

Mr. Sutton is survived by his widow; four children, Mrs. Percy Norton, Hoquiam; Alberta Sutton, New York City; Rocena Sutton, Tacoma, and John Sutton, Tacoma; one sister, Mrs. Ada F. Vall, Germantown, Pa., and a brother, John Sutton, San Francisco.

Passing of Mr. E. L. Hueter

Mr. Ernest L. Hueter, one time president of the Bass-Hueter Paint Company, California Ink Company and San Francisco Pioneer Varnish Company, died recently at his Vallejo street home in San Francisco, aged 73 years. Mr. Hueter was first vice-president of the Loring Club, of which he was a charter member; a director of the Schmidt Lithograph Company and treasurer of the Mercantile Crude Oil Company.

Until illness forced his retirement Mr. Hueter was a member of the foreign trade department of the San Francisco Chamber of Commerce. He also was a member of the board of governors of the San Francisco Musical Association, Olympic Club and Commonwealth Club.

Mr. F. E. Engstrum Dies

Mr. F. E. Engstrum, for many years prominent in the building contracting business in Los Angeles as vice-president and manager of the F. O. Engstrum Company, died at his home, 636 S. Ardmore avenue, Los Angeles, of apoplexy, November 24. Mr. Engstrum was 49 years of age.

Earthquake Wreckage Observed

OBSERVATIONS by the Fuller Company's engineers of the effect of the earthquake in Tokyo upon buildings constructed by that organization have brought out some interesting facts and developed conclusions of value.

These observations, facts and conclusions are presented in a group of reports which may be obtained from the offices of the Fuller Company in New York City.

The conclusions drawn by Mr. Wilbur S. Sample in his report concerning the N. Y. K. and Japan Oil buildings follow, in part:

A close observation of the effects of the recent earthquake in Tokyo induces the belief that all foundations should be of friction piles capped with reinforced concrete, isolated pier spread footings, or a solid concrete mat without piles.

In computing the loads to be carried by either the pile footings or the isolated pier spread footings, only the actual dead load of the structure should be used. No live load should be figured, or at the least only a very small percentage. Care should also be taken to have the bottoms of all footings at the same level, and deep basements should be avoided.

In case of a solid concrete mat foundation the mat should be of sufficient thickness and figured for reinforcement to withstand the actual pressure on the ground as determined by computation of dead loads, and should project sufficiently beyond the outside columns to avoid eccentric loading.

The foregoing recommendations are due to a belief that the soil underlying Tokyo will act as a sort of shock absorber as evidenced by the behavior of such buildings as Seiyukai building, the Imperial hotel and the several other office buildings in Marunouchi.

If the foundations or the piling under them are of such length as to reach a solid strata then the full severity of the earthquake shock is transmitted through the foundations to the entire structure, while if the foundations rest on a soil of somewhat resilient nature the transmission of shock will be very much less.

Structural steel columns should be placed in straight lines in each direction so that at every panel there will be a maximum number of points of resistance. The sections of columns should be as wide as possible in each direction and should be connected at each floor by girders as deep as the requirements for head room will permit. Both columns and girders should be latticed if the computation of stresses does not require solid web plates. If solid webs are required then the webs should be punched at frequent intervals to permit of the proper application of reinforcing steel as will be hereinafter discussed. Between the girders at each floor will be the necessary steel beams for carrying the reinforced concrete floor slabs.

In cases where head room or clear interior spaces are absolutely necessary then resort must be had to knee braces. It is recommended, however, that such rooms as absolutely require great height or clear interior be placed on the top story or as near thereto as possible. Rivets for connection of girders to columns should be in shear whenever possible. Rivets in tension should be studiously avoided.

In all case the specification for the mixture for reinforced concrete should be made after a study of the screen analysis of the coarse and fine aggregates available for use. No assurance of success can be had by the adoption of arbitrary proportions for the materials to be used. The water content should also be carefully considered and only a sufficient amount of water used to enable the practical working of the concrete into the forms.

Exterior piers around steel columns should be of reinforced concrete and as large as possible, extending from the frames of openings on each side and from the heads of window frames below to the sills of window frames above.

Interior columns and connecting girders should be entirely covered with concrete, thoroughly reinforced around and through the columns and longitudinally.

Portland Cement Association

The twenty first annual meeting of the Portland Cement Association was held at the Biltmore, New York, November 19 to 21, inclusive. As usual, the first day's session was devoted to meetings of standing committees covering such subjects as Accident Prevention and Insurance, Advertising and Publicity, Conversation, Technical Problems, etc., resulting in the preparation of annual reports which were presented at the business session on Wednesday, November 21.

On Tuesday, also following several years' custom, the general session was devoted to a discussion of problems concerning mill practice or things related thereto. At this session papers were presented by Paul C. Van Zandt, Chief Engineer, Asano Portland Cement Co., 1918-1923, on "The Manufacture of Portland Cement in Japan" and by T. H. Cosford, Assitant to General Manager, Marquette Cement Manufacturing Co. on "Modern Cement Storages and Improvements in Methods of Loading and Packing, and Bag Handling."

The annual election of officers was held on Wednesday, November 21, with the following results: F. W. Kelley, Albany, N. Y., President; Blaine S. Smith, Chicago, First Vice-President; L. R. Burch, New York, Second Vice-President; John W. Boardman, Detroit, Treasurer.

Opens Los Angeles Office

Mr. W. Marbury Somervell has returned to this country from abroad, and has opened an office in the Hibernian building, Los Angeles, for the general practice of architecture. Mr. Somervell, it may be remembered, closed his office in Seattle to join the military service when the United States entered the World war. Commissioned as Major of Engineers, he was assigned to the Gas Service, and participated in the activities on the French and Italian fronts. He was decorated with the Croix de Guerre, and promoted to Lieutenant Colonel prior to his discharge from the service.

After the war Mr. Somervell returned to France with his family and was engaged in reconstruction projects. Before his recent return to this country he spent some time touring France, giving his artistic ability an opportunity to find expression in sketches and etchings of the various places of interest.

Electrically Equipped Theater

CLAIMING that its electrical equipment will surpass that installed in any theater in the west, Mr. Robert Hicks of San Diego, is having completed the new $800,000 Balboa theater, at the corner of Fourth and E streets, San Diego, so that the house may be opened to the public Christmas week.

The theater will be equipped to be lighted on either the a.c., or d.c. service of the central station lines to take care of any emergency. Exits will be wired for two lights, one the emergency circuit, the other the regular circuit. There will be no prosenium light strips, but the auditorium will be lighted by concealed lighting units. Aisle lights will be provided also.

The stage will have, beside a full equipment of stage pockets, a two-row footlight, with outlets staggered; four 45-foot borders, in which will be used 500-watt lamps on 12-in centers. Provision for four colors to each border will be made, having 11 lamps per color, in individual compartments over which color shades will be used.

The organist and orchestra will be lighted by floods concealed in the ceiling, and over which color screens may be used. The dimming apparatus will be particularly complete. One bank of continuous duty interlocking dimmers, controlling both stage and house lights, with color masters and stake masters are to be installed. Space is to be provided for another complete set of dimmers for future installation.

A complete annunciator buzzer system, connecting the stage and the fifteen dressing rooms, is to be installed with a master button to ring all at once if necessary. Return call buzzers between the stage and projection room, the projection room and orchestra, and the projection room and organ console, will give control of much of the house to the projection operator. Pockets in the front of the balcony for flood lights will also be controlled from the projection booth. Curtain motors will be controlled electrically from both stage and projecting room. Four special gang push button plates, three of which will be in the projection room, will enable the operators to close, open, or stop either of the three or four curtains at any of four positions.

There will be three projection machines in the booth, besides spot lights, arcs, steriopticons, etc. House lights will be controlled from the projection booth by means of a douser circuit. Below the projection room will be a special rheostat room, in which will be housed a 140-amp., 75-volt d.c. flat compound interpole type generator, direct connected to

a three-phase, 220-volt, 1,750-r.p.m., 40-hp. motor. For emergency a Westinghouse automatic starting rectifier will be provided as well. A preview room will also be controlled from the projection room. A 200-watt baby spot in the foyer ceiling will illuminate the usherettes.

The exterior of the building, which is to be of pure Spanish architecture, will be lighted by running borders and floods. The tower will receive silhouette flood lighting, declared to be unique in treatment.

Marquise lighting, letter signs, and later a roof sign, will also receive special electrical equipment. Power will be used in the stage carpenter shop, in the organ operation, in the echo organ in the balcony loft, and a special direct current set will be installed on the stage for stage flood arcs. Temperature control apparatus, a heating system, the vacuum cleaning system, and supply and exhaust air fans, as well as a five sprinkler system, will be electrically controlled and operated.

Mr. Wm. H. Wheeler of San Diego is the architect, and Messrs. Holmes & Sanborn of Los Angeles are the consulting engineers in charge of the construction.

All-Electric Apartment House

In making the apartment a more desirable dwelling place the builder has been quick to recognize the possibilities of the labor-saving electric household devices which have been perfected by the electrical industry during the past decade. Electric ranges have been installed in modern apartments for a number of years, with water and air heaters a more recent, but nevertheless, highly successful innovation.

There are contemplated for immediate erection, in Los Angeles, a number of apartment houses comprising more than a thousand individual apartments all of which will be completely electrified. Contracts have already been signed for the Security Apartments, Hollywood, involving all of the electric labor-saving household devices which have been perfected, including ranges, water heaters, air heaters, refrigerators and dish-washers. Mr. E. M. Frasier, Los Angeles architect, has incorporated in the Security Apartments every convenience which electricity can offer to the housewife.

The net result is that the new building will have the latest and most up-to-date electrical equipment that the market affords. This will include a Frigidaire electric refrigerator, a Hot-point-Hughes electric range, a sani-Sink combination sink and electric dish washer and an Electrode electric water heater for each of the 170 apartments and, in addition, the entire building will be heated electrically with Wesix flush type heaters. The size of the building may best be judged when it is stated that there will be required 533 electric heaters. The class of building and tenant may be determined from the fact that the individual apartments are said to sell for from $6,000 to $34,000 each and it is further stated that by far the major portion of the apartments are already sold, despite the fact that the building will not be ready for occupancy until about May 1, 1924.

Labor Encourages Apprentice Training

That labor unions as well as employers are growing more and more concerned about the apprentice problem is shown in two recent developments toward the training of apprentices at Carnegie Institute of Technology in Pittsburgh. In both of these developments, which have the one ultimate purpose of better training, but which are along different lines of work, the significant parallel has been the fact that the local labor unions have taken the initiative in seeking the apprentice training.

One of these organizations is the local of the International Wood, Wire and Sheet Metal Lathers union which has effected a working agreement with Carnegie Tech. whereby the union apprentices to the union will be trained there. As a result of this agreement, 15 apprentices have been recently enrolled at the Institute and are compelled by the union to attend night school classes on three nights a week for the next two years.

The other development is the result of an agreement between the Local Union No. 12, Amalgamated Sheet Metal Workers' International Alliance and the Sheet Metal Contractors Association of Pittsburgh. Subsequent to this important partnership between organized labor and the employers, a group of more than 60 sheet metal apprentices is now enrolled at Carnegie Tech. to receive training one full day a week for the last four years of the five-year apprenticeship period. The agreement takes on added significance from the announcement that the employers have agreed to pay the apprentices their full wages for the day they spend in classes; and the union officials have taken the responsibility of compelling attendance to classes.

She—You say the excavation for your new home has begun? Why, I don't see a sign of it!

Suburbs—In my pocket. I've just paid $250 to the architect for the plans.

San Francisco Chapter, A. I. A.

The annual meeting of San Francisco Chapter, A. I. A., was held in the Architectural Club rooms, October 18, when the following officers were elected for 1924:

President, J. S. Fairweather; Vice-president, John Reid, Jr.; Secretary and Treasurer, Albert J. Evers; Directors for three years, Geo. W. Kelham and Arthur Brown, Jr.

The following chairmen of committees have been appointed:

Architectural Relations and Publicity, Harris Allen; Competition and Practice, Sylvain Schnaittacher; Historic Monuments, E. E. Coxhead; Registration, Laws and Building Relations, Wm. Mooser; War Memorial, Arthur Brown, Jr.; Educational Fund, John Bakewell.

In its official Monthly Bulletin for November, the Chapter published a list of its membership. The following corrections in addresses should help to make this directory of membership much more useful: Earle B. Bertz from 68 Post street to 168 Sutter street; C. W. Dickey from Oakland City Hall to 2149 Broadway, Oakland; J. W. Dolliver from 114 Sansome street to Monadnock building, San Francisco; G. A. Lansburgh from 709 Mission street to 140 Montgomery street; Kenneth MacDonald from 234 Pine street to Brackshops building, Los Angeles; Mathew O'Brien from 68 Post street to Nevada Bank building; Houghton Sawyer from Shreve building to Hearst building; Albert Schroepfer from Nevada Bank building to Foxcroft building; Walter T. Steilberg from Flatiron building to Humboldt Savings Bank building.

New Architect for State College

Mr. Stanley A. Smith, member of the Minnesota Chapter, A. I. A., succeeded Mr. Rudolph Weaver as professor of architecture and architect for the college at the State College of Washington. Professor Smith assumes his new duties with a good background of training and experience. A graduate of Kansas State Agricultural College, he also studied architecture at the Massachusetts Institute of Technology, and has had teaching experience in architecture at the State Colleges of Kansas and North Dakota, supplementing this by practical experience in architectural practice.

Palo Alto Theatre

Plans are being prepared by Architects Weeks & Day of San Francisco for a $100,000 theatre at Palo Alto, for Mr. E. J. Arkush and associates.

Notable Plumbing Installation

IT is not generally known that the New Biltmore hotel in Los Angeles is one of the best equipped hostelries on the Pacific Coast, from the standpoint of plumbing fixtures. The plumbing contract for this building was the largest ever awarded in the West, and the installation represented the finest quality of materials and fixtures manufactured. Large size waste line and water piping were installed throughout, to give ample supply and quick discharge from fixtures. It is an interesting fact that over ninety per cent of the plumbing material was manufactured in California, including all the vitreous china lavatories, water closets, urinals, and slop sinks, all made at the Pacific Sanitary Manufacturing Company plant in Richmond, California, and furnished by the Thomas Haverty Company of Los Angeles.

Seven carloads of pipe fittings and fifty-two miles of wrought iron pipe were used. All fixtures have hot water as well as ice water and more than six miles of brass pipe were used. There were forty-nine stacks not counting the vents. A complete shop was installed in the basement of the hotel where all pipe was cut and threaded and fittings screwed on. The Haverty Company had equipment installed to the amount of $80,000, including twelve pipe threading machines, six cut off machines, dozens of vises and cutters, threaders and wrenches of all sizes. The contract of the Pacific Sanitary Manufacturing Company called for one thousand and seventy-eight lavatories, eleven hundred and seventy bowls, sixty-five urinals, and forty slop sinks, a total of two thousand, three hundred and thirteen pieces, shipment of which began in February, 1923, and was completed in May.

Some idea of the size of the hotel may be had from the following figures: The building contains sixteen acres of floor surface, three miles of corridors, one thousand rooms, twenty-one thousand yards of concrete, six thousand tons of steel, five million bricks, six thousand doors. The outfitting of the hotel required ninety thousand pieces of silver and one hundred and sixty thousand pieces of china. The plumbing contract was completed in record time, sixty days ahead of schedule.

The building was designed by Architects Schultze and Weaver of New York and was built by Schofield & Co. of Los Angeles.

THE NEW BILTMORE HOTEL, LOS ANGELES
Schultze & Weaver, Architects

THE NEW BILTMORE HOTEL, LOS ANGELES, IS EQUIPPED THROUGHOUT WITH PACIFIC SANITARY MANUFACTURING COMPANY'S FIXTURES

THIS LONG ROW OF LAVATORIES IN THE NEW BILTMORE HOTEL, LOS ANGELES, ARE ALL "PACIFIC"

ONE THOUSAND AND SEVENTY-EIGHT OF THESE LAVATORIES IN THE NEW BILTMORE HOTEL, LOS ANGELES, FURNISHED BY PACIFIC SANITARY MANUFACTURING CO.

FROM CHURCH TO HOME

(From Atlas White Almanac)

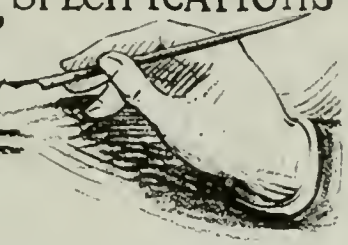
WAY back in 1892, the citizens of Decorah, Iowa, built a small brick church and it was only twelve years ago that it ceased to be the meeting place for a little congregation. Since the church was abandoned no attention whatsoever was paid to it and it became dilapidated. Last year Mr. A. Leytze, in the face of much criticism, purchased the building and had it remodeled into the attractive residence illustrated on this page.

A more substantial home could scarcely be built. The old brick walls were thirteen inches thick and had been furred out on the interior with two by fours for receiving the lath and plaster. The walls were of such height that a second floor was placed in the structure, adding thereby four additional rooms. The size of the basement was increased and it was also dug deeper. The coal bin, boiler and laundry rooms and a vegetable cellar

SHOWING CHURCH BEFORE AND AFTER ALTERATIONS

WRITE IN ON THE SPECIFICATIONS

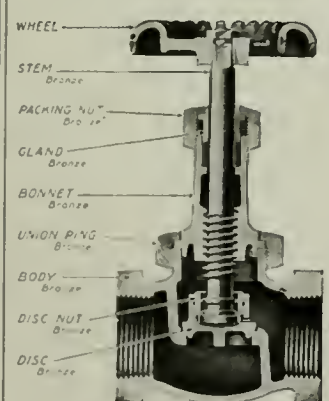
Buttonlath



THE selection of Buttonlath as the base for the walls of a building is a tribute to the judgment of the architect. Buttonlath is in successful use today in thousands of California homes, factories and office buildings.

BUTTONLATH MANUFACTURING CO.
207 BALBOA BUILDING, SAN FRANCISCO

Do your valve specifications protect your clients?



It takes a high-grade product to stand up for a long period of years and to continue to give 100 per cent efficient service. For 44 years Kennedy Valves have been proving their ability to give just this kind of service. By specifying Kennedy Valves you provide yourself and your clients the protection which the Kennedy name and the Kennedy guarantee insure to valve users.

The special features and advantages of Kennedy Valves are described in the Kennedy Catalog, listing over 600 different types and sizes. May we send you a copy? 305

THE KENNEDY VALVE MFG. CO.

Branch Offices and Warehouses:
NEW YORK, 95 John St.
SAN FRANCISCO, 23-25 Minna St.
BOSTON, 47 India St.
CHICAGO, 228 N. Jefferson St.

Sales Offices
Salt Lake City, 503 Dooley Bldg.
El Paso, 704 Two Republics Bldg.
Seattle, L. C. Smith Bldg.

were partitioned off in the basement. The rear portion has been fitted up as a garage. This is reached by a driveway from the rear, which is partially concealed by a pergola. A cement floor has been placed in the entire basement and the walls which provide new footings are also made of concrete. This gives a clean, dry basement which is certainly a valuable asset to the home. The stucco put on the exterior makes the residence more resistant to changes of weather and tends to make the house more comfortable inside.

In remodeling the building, Messrs. Hanson and Altfillisch, the architects and engineers in charge of the work, applied the Portland cement stucco directly to the brick walls. It was found that the lime mortar in the brick points had disintegrated so badly that it was completely washed out. The stucco mortar, by filling the washed out joints, was securely keyed to the walls. Except for the labor of removing the dirt and loose particles of mortar, no extra labor was required before applying the stucco. Three coats of stucco were applied; the two base coats were of regular Portland cement and sand, while the finish coat was made of Atlas White Portland cement and a selected sand. The color of the house is white and the texture of the finish coat is comparatively smooth. The new brick placed around the window and door openings add charm to the house and the attractive blinds and window boxes at the second floor windows also contribute much to its appearance.

The interior arrangement is exceptionally good and provides a comfortable, roomy home. The second floor rooms have not been finished as these rooms were not needed. The cost of the home, including original property, grading, shrubbery complete, was about 26c. per cubic foot. This type of home, according to the architects, would easily cost between 40 and 50 cents a cubic foot if built new.

Designing School Buildings

Messrs. Wyckoff & White, of San Jose, are preparing plans for a number of new schoolhouses in Santa Clara county. This firm has been commissioned to prepare the plans for a one-story reinforced concrete school building to cost $79,000 for the Valley View, Hacienda and Pioneer Districts; also a $95,000 school for the Willow Glen School District near San Jose. Plans have been prepared by the same firm for a $100,000 two-story reinforced concrete addition to the Ford Company's department store at Watsonville, and for an $80,000 reinforced concrete addition to the Hotel Cominos at Salinas.

Idaho's New School of Architecture

By PROFESSOR RUDOLPH WEAVER

In launching a Department of Architecture at the University of Idaho, with a four-year course leading to a degree, the regents have met a growing need and fulfilled a desire to further develop the work in the fine arts at the University. Heretofore there have been some "art" courses, but not in a separate departmental organization. Courses have also been given in dramatics and there has been a separate Department of Music, but the new Department of Architecture is the first step in the full development of the visual arts, or, as they have been called at some institution, the allied arts.

With no agricultural college to compete with for a division of the support and with an unusually sympathetic board of regents and administrative officers, the atmosphere for work in the fine arts is especially propitious. Not long since a professor here wrote an excellent treatise on the Italian Renaissance; last year a pageant of no mean artistic merit was produced here, and continuously there are evidences of an active desire for and encouragement in the study of beauty in various departments of human activity.

It is the intention of the regents that the Department of Architecture shall participate in the activities of the state in such a way that it will assist in all movements for institutional and civic beauty, and initiate any movement for the benefit of the people of Idaho whenever it is possible and advisable.

The distinctive feature of the instructional work will be the method of approach in the design work. The usual system of giving architectural drawing and the orders as beginning work will not be followed. The beginning work will be lectures in visual beauty and original problems in line, space and value composition. Draftsmanship will be secondary to design, as it is the experience of the director that it is harder to awaken the imagination and develop creative powers than it is to teach clever draftsmanship. The study of orders is taken up later as part of the elements of architecture and not as the basis of the system for architectural proportion.

A former student of this system of teaching, Mr. Walter Burkhart, now of New York City, entered the Paris prize competition two years ago and was placed second in the finals.

It might be mentioned that since many students who take the courses in architecture go into related fields of artistic activity, such as industrial design, this

FIRST METHODIST EPISCOPAL CHURCH, LOS ANGELES, CALIFORNIA. JOHN C. AUSTIN, Architect

FOR DISTINCTIVE RESULTS

Terra Cotta offers you the following possibilities:

Elaborate enrichment in decorative elements without excessive cost.

Adaptibility to all motives of stylistic design.

Color effects in the widest range offered by any permanent medium.

Fire resistant and cleanable properties of surpassing merit.

National Terra Cotta Society, representing the Terra Cotta Industry in the United States, will be glad to assist you with literature and data for specifying effectively. Address 19 West 44th Street, New York City.

TERRA COTTA

Permanent *Beautiful* *Profitable*

method of instruction lays a sound foundation for their development.

That there has been a demand for the establishment of a Department of Architecture at the University of Idaho is evidenced by the fact that a large beginning class has already been enrolled.

Trade Publications

"The Story of Pure Iron—and Why It Resists Rust," is the name of a booklet just issued by the California Corrugated Culvert Company, Los Angeles and West Berkeley. This booklet represents several years of research work and is an endeavor to present in an interesting manner the history of pure iron. The book is handsomely illustrated and in conclusion gives a complete list of the various industries that use Armco Ingot iron in their products.

"Bowser, The Sign of Quality" is a 25-page booklet filled with much useful information, briefly compiled about Bowser Products with special reference to Bowser oil tank equipment. The various good points of Bowser materials are outlined, and there are illustrations of the Bowser century tank and a bird's eye view of the company's extensive home plant.

"The Story of Oak Floors," is presented in an attractive brochure published by the Oak Flooring Bureau, 1014 Ashland Block, Chicago. In this little booklet is given a scholarly treatise embracing the character, dignity and charm enherit in oak. The writer goes on to explain why oak constitutes the modern flooring, affording beauty and service. Illustrations in color make this brochure invaluable to architects in search of suggestions for interior finish and furnishings.

Sacramento Municipal Auditorium

The Sacramento city council is considering the appointment of an architect to prepare plans for the proposed municipal auditorium for which bonds were recently voted. An ordinance has been presented seeking the creation of a Division of Architecture, to be operated in conjunction with the City Engineering Department.

Gardens For Municipal Group

Emerson Knight, landscape architect and engineer, 9 Geary street, San Francisco, has completed plans and is laying out the gardens for the new building group of the Marin Municipal Water District in San Rafael.

Outdoor Auditorium

Professor John William Gregg, Landscape Architect with the University of California, has recently prepared plans for the development of an outdoor auditorium as a part of the general campus plan for the Northern Branch of the College of Agriculture at Davis. This is but one of the numerous serviceable features called for by the general plan for the development of that institution, which was prepared by Professor Gregg and adopted by the Board of Regents two years ago.

The outdoor auditorium, besides being a decided campus improvement from a landscape standpoint, will fulfill a long felt want by providing an open air area where numerous meetings of all kinds can be held under the cooling shade of European sycamores. The seating section proper will occupy a sunken lawn area directly in the rear of one of the main buildings, and will terminate in a raised stage area which will be further emphasized and embellished by plantings of cypress, Lombardy poplars and other similar material to produce a pleasing stage setting of green.

Demand for Bataan Mahogany

The Cadwallader-Gibson Company of San Francisco, reports having splendid success with its "Bataan" mahogany, which is grown in the Highlands of the island of Luzon. This material should not be confused with Philippine mahogany, since it is free from worm holes and possesses a fine lustre which is permanent. Recent installations of Bataan mahogany includes the entire interior trim of the new Fitzhugh building, San Francisco, designed by Architects Reid Bros., also the sixteen-story addition to the Oakland Bank of Savings building, Oakland, and the new seventeen-story Tribune building in Oakland.

Los Angeles Architectural Club

One hundred and twenty members attended the annual meeting of the Los Angeles Architectural Club, and listened to splendid addresses by Mr. Edwin Bergstrom and Mr. Garret Van Pelt. Jess Stanton was elected president; Sumner Spaulding, vice-president; J. C. Simons, secretary; Paul Penland, treasurer and Clifford Truesdell, junior director.

Another Berkeley Bank Building

An eight-story Class A bank and office building is to be erected on the southeast corner of University and Shattuck avenues, Berkeley, by the American Bank of San Francisco. The plans are now being prepared by Architect Edward T. Foulkes, Crocker building, San Francisco.

The Residence of Miss Emily Osgood, Lincoln, Massachusetts
Mr. Edward H. Pritchard, Boston, Architect

WATERPROOFED WHITE MEANS MEDUSA

PLEASING effects in white stucco *begin* with the house itself—but as this photograph proves, they need not *end* there. The note of harmony in the country place can be delightfully emphasized through the use of stucco, using Medusa Waterproofed White Cement: harmony with the environment and harmony with the client's own tastes and ideals.

Medusa Waterproofed White Cement stucco is first of all, permanently damp-proof. Moisture cannot penetrate it, because the Waterproofing and the White Cement are thoroughly ground together at the mill, forming an inseparable element. In addition, Medusa Waterproofed White Cement is *truly non-staining.*

Specifications and data in our catalogs in Sweet's are amplified in The Medusa Book, a copy of which we shall be indeed pleased to send you upon request.

Waterproofed White Means Medusa

THE SANDUSKY CEMENT CO., Dept. P, Cleveland, Ohio

Medusa Stainless White Cement—Plain and Waterproofed—and Medusa Waterproofing are carried in stock and sold by leading building-supply dealers in California, Oregon and Washington.

MEDUSA
WATERPROOFED
WHITE CEMENT

Eastbay Engineers' Club

Organization of an "Eastbay Engineer's Club," which will be affiliated with the San Francisco Chapter of the American Association of Engineers, is under way. At a meeting held in the Hotel Oakland, at which Mr. George Mattis, formerly city engineer of Oakland, acted as temporary chairman, Messrs. V. D. Cousins and Charles de Wolf were appointed to draw up a program of organization. The speakers included Mr. Mattis, who is president of the San Francisco chapter of the association; Mr. Harrison S. Robinson, president of the Oakland Chamber of Commerce; and Mr. Charles F. Lee, of San Francisco.

William F. Gunnison Busy

New work in the office of Mr. William F. Gunnison, 57 Post street, San Francisco, includes a six-story Class B apartment house on Van Ness avenue, to cost $200,000; a two-story frame and stucco apartment house on Broderick, south of Ellis street, San Francisco, to cost $15,000; a five-story addition to the Knickerbocker hotel on Post street, to cost $50,000; and the construction of a large dormitory for the Glad Tidings Tabernacle & Bible Training school on Ellis street, San Francisco, to cost $100,000.

Letter From Mr. Vogel

Architect Joshua H. Vogel of Seattle, writes from Shanghai, China, where he is on duty with the Mission Architects' Bureau, a foreign missionary activity of the Methodist Episcopal church, that he and Mrs. Vogel are so far safe from bandits and earthquakes. "The bandit question is still a menacing one in China," he writes. "I doubt if we have completely probed this question, but on the other hand, don't forget that there are millions of peace-loving Chinese who will, in time, rise up and settle this situation."

Small House Competition

The Los Angeles Architectural Club—Examiner Small House Competition was unusually successful.

Following is a list of the contest winners:

First prize, $500, Leffler B. Miller, 1154 West 42nd street, of the Allied Architects' office, Los Angeles.

Second prize, $250, C. E. Perry, Jr., 1014½ N. Virgil avenue, of Myron Hunt's office, Los Angeles.

Third prize, $100, A. H. Clarke, 1107 Hibernian building, of Myron Hunt's office, Los Angeles.

Fourth prize, honorable mention, $25, A. M. Jeffers, 1226 South Glendale avenue, Glendale.

Fifth prize, honorable mention, $25, A. McSweeney, 2814 Walton avenue, Los Angeles.

Sixth prize, honorable mention, $25, R. D. Macpherson, 1107 Hibernian building, Los Angeles.

Seventh prize, honorable mention, $25, Lee F. Fuller, 315 Wright & Callender building.

Eighth prize, honorable mention, $25, C. R. Spencer, 1107 Hibernian building.

Ninth prize, honorable mention, $25, L. Wurgoft, 1504 N. Vermont Ave.

Tenth prize, honorable mention, Lee F. Fuller, 315 Wright & Callender building.

Eleventh prize, honorable mention, William J. Stone, 603-8 I. W. Hellman building.

Twelfth prize, honorable mention, A. J. Wilson, 521 Union League building.

European Travelers

Two Seattle architects have returned recently from abroad. Mr. Harlan Thomas, with Mrs. Thomas, spent six months equally divided between England, France and Italy, enjoying the art and architecture of these countries.

Mr. Harold C. Whitehouse of Spokane made a tour through France, Switzerland, Italy, Belgian, Holland and England, with a number of other architects and artists from the East.

Furnaces

AGENTS FOR

FRONT RANK All Steel Warm Air Furnaces

AND THE OLD RELIABLE

THATCHER Cast Iron Warm Air Furnaces

REGISTERS — FURNACE FITTINGS — REPAIRS

Montague Range and Furnace Company

327-329 JESSIE STREET Phone Garfield 1422 826-830 MISSION STREET

SAN FRANCISCO, CALIF.

Physicians' Building, Oakland. Willis Lowe, Architect. P. A. Palmer, Builder

RICHMOND RED RUG BRICK
AND CREAM COLOR TERRA COTTA

are here combined with most effective results. Beauty and economy were factors in influencing the use of RICHMOND BRICK

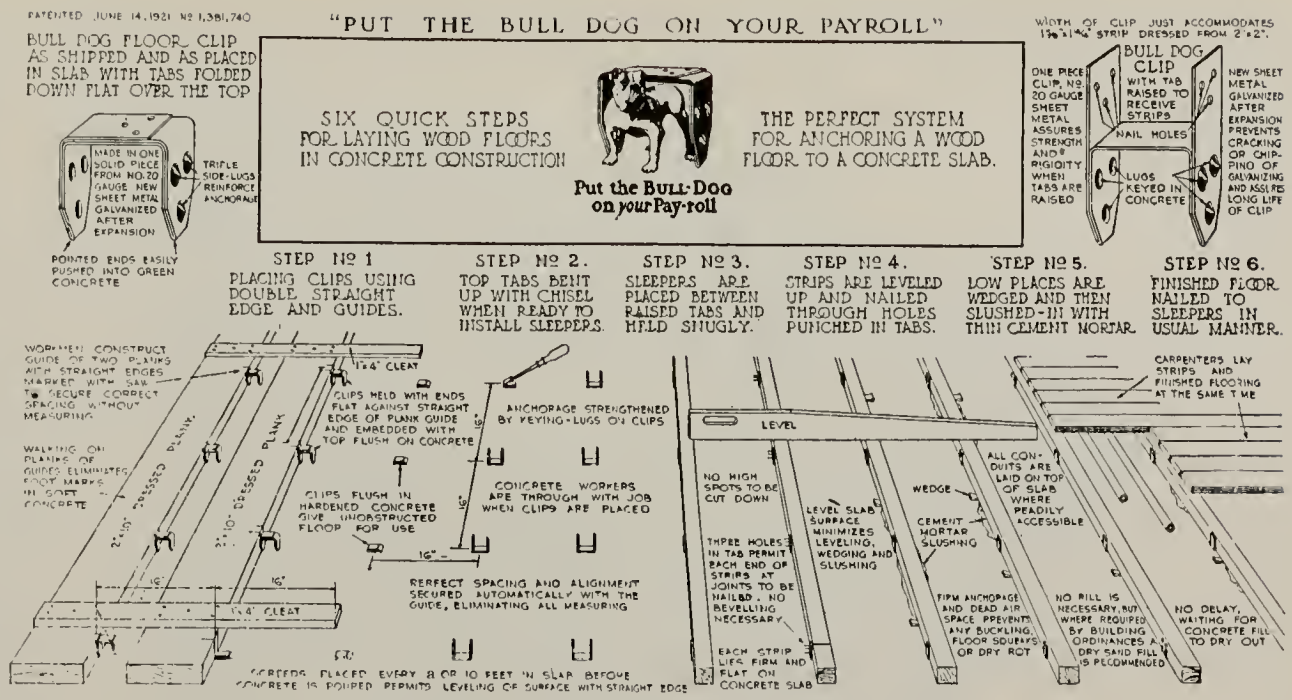
United Materials Company
Northern California Distributors
SHARON BUILDING, SAN FRANCISCO

Analyse Your Costs quickly, accurately and completely from the handy unit tables of the **Building Labor Calculator**

Based on twenty-five years of public estimating and general contracting experience, these tables give material quantities and labor hours in decimal constants and in convenient units, as per 100 square feet, 100 square yards and so forth, and are independent of price or wage fluctuations. No other book like it!

For sample pages, descriptive data and free examination offer, clip this ad and write

GORDON M. TAMBLYN, 9 Sweeney Building, Denver, Colorado.


PATENTED JUNE 14, 1921 Nº 1,381,740
"PUT THE BULL DOG ON YOUR PAYROLL"
BULL DOG FLOOR CLIP AS SHIPPED AND AS PLACED IN SLAB WITH TABS FOLDED DOWN FLAT OVER THE TOP
MADE IN ONE SOLID PIECE FROM NO. 20 GAUGE NEW SHEET METAL GALVANIZED AFTER EXPANSION
TRIPLE SIDE-LUGS REINFORCE ANCHORAGE
POINTED ENDS EASILY PUSHED INTO GREEN CONCRETE
SIX QUICK STEPS FOR LAYING WOOD FLOORS IN CONCRETE CONSTRUCTION
Put the Bull-Dog on your Pay-roll
THE PERFECT SYSTEM FOR ANCHORING A WOOD FLOOR TO A CONCRETE SLAB.
WIDTH OF CLIP JUST ACCOMMODATES 1 3/8 x 1 3/4 STRIP DRESSED FROM 2"x2".
BULL DOG CLIP WITH TAB RAISED TO RECEIVE STRIPS
ONE PIECE CLIP, NO. 20 GAUGE SHEET METAL ASSURES STRENGTH AND RIGIDITY WHEN TABS ARE RAISED
NAIL HOLES
LUGS KEYED IN CONCRETE
NEW SHEET METAL GALVANIZED AFTER EXPANSION PREVENTS CRACKING OR CHIPPING OF GALVANIZING AND ASSURES LONG LIFE OF CLIP
STEP Nº 1 PLACING CLIPS USING DOUBLE STRAIGHT EDGE AND GUIDES.
STEP Nº 2. TOP TABS BENT UP WITH CHISEL WHEN READY TO INSTALL SLEEPERS.
STEP Nº 3. SLEEPERS ARE PLACED BETWEEN RAISED TABS AND HELD SNUGLY.
STEP Nº 4. STRIPS ARE LEVELED UP AND NAILED THROUGH HOLES PUNCHED IN TABS.
STEP Nº 5. LOW PLACES ARE WEDGED AND THEN SLUSHED-IN WITH THIN CEMENT MORTAR.
STEP Nº 6. FINISHED FLOOR NAILED TO SLEEPERS IN USUAL MANNER.
WORKMEN CONSTRUCT GUIDE OF TWO PLANKS WITH STRAIGHT EDGES MARKED WITH SAW TO SECURE CORRECT SPACING WITHOUT MEASURING
WALKING ON PLANKS OF GUIDES ELIMINATES FOOT MARKS IN SOFT CONCRETE
1"x4" CLEAT
2"x10" DRESSED PLANK
16"
CLIPS HELD WITH ENDS FLAT AGAINST STRAIGHT EDGE OF PLANK GUIDE AND EMBEDDED WITH TOP FLUSH ON CONCRETE
CLIPS FLUSH IN HARDENED CONCRETE GIVE UNOBSTRUCTED FLOOR FOR USE
ANCHORAGE STRENGTHENED BY KEYING-LUGS ON CLIPS
CONCRETE WORKERS ARE THROUGH WITH JOB WHEN CLIPS ARE PLACED
PERFECT SPACING AND ALIGNMENT SECURED AUTOMATICALLY WITH THE GUIDE, ELIMINATING ALL MEASURING
SCREEDS PLACED EVERY 8 OR 10 FEET IN SLAB BEFORE CONCRETE IS POURED PERMITS LEVELING OF SURFACE WITH STRAIGHT EDGE
LEVEL
NO HIGH SPOTS TO BE CUT DOWN
THREE HOLES IN TAB PERMIT EACH END OF STRIPS AT JOINTS TO BE NAILED. NO BEVELLING NECESSARY.
EACH STRIP LIES FIRM AND FLAT ON CONCRETE SLAB
LEVEL SLAB SURFACE MINIMIZES LEVELING, WEDGING AND SLUSHING
WEDGE
CEMENT MORTAR SLUSHING
FIRM ANCHORAGE AND DEAD AIR SPACE PREVENTS ANY BUCKLING, FLOOR SQUEAKS OR DRY ROT
ALL CONDUITS ARE LAID ON TOP OF SLAB WHERE READILY ACCESSIBLE
CARPENTERS LAY STRIPS AND FINISHED FLOORING AT THE SAME TIME
NO FILL IS NECESSARY, BUT WHERE REQUIRED BY BUILDING ORDINANCES A DRY SAND FILL IS RECOMMENDED
NO DELAY, WAITING FOR CONCRETE FILL TO DRY OUT

Architects and contractors of reinforced concrete buildings have been quick to see the obvious advantages of the Bull dog Floor Clip method of laying wood floors over concrete, and many of the modern buildings in California have used this method with entire success.

The Bull Dog Floor Clips are imbedded flush in the green concrete slab, the workmen using a plank as a guide to space the clips and protect the slab. These clips are generally spaced 16-inch centers both ways. As shipped from the factory, the clips form no obstruction for wheeling and trucking.

When the wood finish floor is to be laid, the two top tabs of the clips are raised. Two inch wood sleepers are then placed between the tabs, leveled with a straight edge and then nailed into position. In low spots, wedges are placed under the sleepers or thin concrete slushed under the sleeper to give a solid bearing.

The elimination of the concrete fill between the sleepers makes a substantial reduction in dead load of floor area and provides an air space which eliminates dry rot. The finished floor is given positive anchorage to the concrete slab, eliminating floor squeaks and floor buckle. The actual saving to be made by the use of this method is from 3 to 4 cents a square foot.

Samples and complete information can be had by writing The Bull Dog Floor Clip Company, 77 O'Farrell street, San Francisco, or Mr. Gerald M. Weller, 600 Metropolitan building, Los Angeles.

Detail of Residence, Glen Cove, L. I. LaFarge & Morris, Architects

THIS gateway has a simple dignity, admirably fitting the mansion which suggests the very best tradition of Colonial brick architecture. If you do not have "Architectural Details in Brickwork," ask for the portfolio. The halftone plates, issued in three series, each in a folder ready for filing, will be sent to any architect requesting them on his office stationery. The plates show many examples of the beautiful effects that can be economically obtained through the use of standard size face brick. Address, American Face Brick Association, 1759 Peoples Life Building, Chicago, Illinois.

How Roofing Paper Helps to Grow Pineapples in Hawaii

A STRIKING innovation in the growing of pineapples resulting in a 40 per cent increase, and which may as successfully be applied to every form of agriculture, was revealed yesterday by Mr. R. E. Ragland, upon his arrival from Honolulu.

"Pabco mulch paper, laid in rows along the pineapple beds, has been the means of increasing the production of the island growers," says Mr. Ragland, who is a member of the Honolulu export department of The Paraffine Companies, Inc., of San Francisco, which has supplied the large bulk of the mulch used by the insular growers this year.

Mr. Ragland explains that the plants are distributed between the rows of mulch, or roofing paper, and planted through the paper. The planting is done by thrusting a long trowel through the paper at correct intervals and by tilting the trowel the plant is slipped into the ground.

It was not until recentiy that anybody thought that the mulch paper could be utilized as an asset of agriculture. Mr. C. F. Eckart, known as the Burbank of Hawaii, is the man to whom credit is due, he having experimented for years before perfecting his process and obtaining patents on it.

"Today," says Mr. Ragland, "practically every grower in the islands uses Pabco mulch," and a new adjunct of a great western industry has been firmly established.

Engineer to Investigate Quake Effects

Mr. Homer M. Hadley, district engineer in charge of the Portland Cement Association office at Seattle, sailed for Japan October 5 to make a thorough investigation of how modern structures, particularly those consisting largely of reinforced concrete, withstood the recent earthquake.

Mr. Hadley is particularly well qualified for a mission of this kind, having for many years specialized in structural engineering. Before joining the forces of the Portland Cement Association, his practical experience included a number of years with some of the foremost engineering firms on the Pacific Coast.

Mr. Hadley's trip will probably require three months or more absence from his official duties with the Portland Cement Association, although it is expected that very soon after his arrival in Japan he will be able to cable a condensed preliminary report that will reconcile a number of conflicting messages which have been sent out, as to just how modern structures in Japan withstood the earthquake.

Estuary Tube Consultants

Mr. C. Dereleth, Jr., dean of the College of Engineering at the University of California, and Mr. Clifford M. Holland, an engineer for the Hudson River Tube Project, have been appointed by the Alameda County Supervisors to act as consulting engineers for the proposed estuary tube for which bonds of $4,500,000 were voted. The engineers will receive a salary of $100 a day. The salaries will apply only to the actual time they are called upon to put in on the work.

Butte Electric & Mfg. Co. Moves

The Butte Electric & Manufacturing Company is now located in its new home, 956 Folsom street, having moved from 534 Folsom street, which latter address has been the headquarters of the firm for a number of years. The new building is well adapted to the needs of this growing concern, of which Mr. Paul C. Butte is the head.

WHICH?
Monolithic, automatically "back-plastered" slab of plaster or stucco as applied over National Stucco-Plaster Reinforcement.
"Keyed-in" place plaster or stucco as applied over wood lath or wood plaster-bases or stucco-bases.
The one cannot crack or come off unless it takes the reinforcement with it—this is impossible unless done intentionally.
The other is the direct cause of cracks and falling, because the wood is continually expanding or contracting due to heat or cold, dampness or dryness.
If you are interested in better and, at the same time, less costly construction, send for our new free catalog.
NATIONAL STEEL FABRIC CO.
(Subsidiary of Pittsburgh Steel Co.)
Monadnock Building San Francisco, Cal.
World's Largest Manufacturers of Welded Steel Fabric
NATIONAL STEEL FABRIC CO
Subsidiary of PITTSBURGH STEEL CO
UNION TRUST BUILDING PITTSBURGH, U.S.A.

A Combination Fixture
for Up-to-date Users

THE "Bryn Mawr" Lavatory Fitting is a popular mixer enabling the user to wash in running water tempered to personal likes.

It fits any staple vitreous china lavatory with or without back provided with the proper hole back of the over-flow.

It is in much demand for porcelain enameled lavatories having the 1⅛-inch chainstay hole.

The design is attractive, particularly the nozzle, handles, flanges and knob. All working parts and connections have been designed to insure quickness and ease in installation and to give durable, satisfactory service.

For convenience in rewashering, the thread barrel and stem are removable from the top; the seat can be removed from below.

A plentiful stream is delivered thru the single nozzle.

HAINES, JONES & CADBURY COMPANY · HAJOCA · TRADE MARK · PHILADELPHIA

HAINES, JONES & CADBURY CO.

MAKERS OF PLUMBING SUPPLIES

857-859 FOLSOM STREET, SAN FRANCISCO

PHILADELPHIA-NEW YORK-RICHMOND, VA.-SAVANNAH

JACKSONVILLE-CHARLOTTE

IRON AND STEEL PRODUCTS

WAREHOUSE AND MILL SHIPMENTS

STEEL BARS

for

CONCRETE REINFORCING FURNISHED *and* INSTALLED

EDW. L. SOULE CO.
SAN FRANCISCO

SUTTER 2821

RIALTO BUILDING

Specify

"LAMAO"

for Interior Trim

A Philippine hardwood that lends itself to practically any colored stain. LAMAO finishes a beautiful walnut or Oak and when finished as Mahogany, it is hard to tell it from Honduras Mahogany.

The additional expense of using LAMAO trim in the average home instead of softwoods is very nominal and it materially increases the value of the home.

Write for comparative costs and samples.

Cadwallader-Gibson Co., Inc.
5th AND BRANNAN STREETS
SAN FRANCISCO
LOS ANGELES OAKLAND SEATTLE
Lumber, Veneers, Panel, Hardwood Flooring

Have You Forgotten Anything?

YOU CERTAINLY HAVE IF YOU HAVE OVERLOOKED THE OPPORTUNITY OF USING KEWANEE STEEL HEATING BOILERS IN YOUR BUILDING PROGRAM.

Strength-Durability-Efficiency

MANY CALIFORNIA OIL BURNING INSTALLATIONS

Low Pressure Heating Boilers *High Pressure Power Boilers*

KEWANEE BOILER COMPANY

KEWANEE, ILLINOIS

SAN FRANCISCO BRANCH OFFICE: 216 PINE STREET
LOS ANGELES OFFICE: 420 E THIRD STREET

Present Cost of Building Materials

THESE quotations are based on reliable information furnished by the San Francisco material houses. Date of quotations, December 20, 1923.

All prices f. o. b. cars San Francisco or Oakland For country work add freight and cartage to prices given.

Bond—1½% amount of contract.

Brickwork—

Common, $35.00 per 1000 laid.
Face, $75.00 per 1000 laid.
Enamel, $150.00 per 1000 laid.
Common, f. o. b. cars, $15.50, plus cartage.
Face, f. o. b. cars, $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (Delivered to building in carload lots.)

12x12x3 in.	$102.00 per M
12x12x4 in.	115.00 per M
12x12x6 in.	160.00 per M
12x12x8 in.	165.00 per M

Hod carriers, $6.50 per day.
Bricklayers, $10.00 per day.
Lime—$2.25 per bbl.; carload, $2.15

Composition Floors—24c to 50c per sq. ft. In large quantities, 24c per sq. ft.

Composition Stucco—$1.90 to $2.10 per sq. yard (applied).

Concrete Work (material at San Francisco bunkers)—

No. 3 rock	$2.15 per yd.
No. 4 rock	2.30 per yd.
Niles pea gravel	3.50 per yd.
Niles gravel	2.35 per yd.
Niles top gravel	2.75 per yd.
City gravel	2.15 per yd.
River sand	1.75 per yd.
Delivered bank sand	1.00 per yd.

SAND

Del Monte	$1.25 to $1.50 per ton
Fan Shell Beach (Car lots, f. o. b. Lake Majella)	$2.50 to $3.00 per ton
Swedish cement	$2.68 per bbl.
Belgian cement	2.65 per bbl.
Cement (f. o. b. cars)	3.01 per bbl.

Rebate for sacks, 10c each.

Atlas "White"	$ 9.75 per bbl.
Medusa "White"	$ 9.95 per bbl.
Forms, Labors	$30.00 per M

Wage—

Concrete workers	$5.00 per day
Cement finishers	8.50 per day
Laborers	5.00 per day

Dampproofing—

Two-coat work, 25c per yard.
Membrane waterproofing—4 layers of P. B. saturated felt, $5.25 per square.
Hot coating work, $2.00 per square.
Wage—Roofers, $8.00 per day.

Electric Wiring—$6.00 to $10.00 per outlet for conduit work (including switches).

Knob and tube average $3.00 to $5.50 per outlet.
Wage—Electricians, $8.00 per day.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in 4-story bldg., $3250; direct automatic, about $3000.

Excavation—

$1.25 per yard. If sand. Teams, $10.00 per day. Trucks, $21 to $30 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, $105.00 per balcony.

Glass—(Consult with manufacturers.)

21 ounce, 16c per square foot.
Plate, $1.10 per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. ft.
Obscure glass, 28c per square foot.
Note—Add extra for setting.
Wage—Glaziers, $8.00 per day.

Heating—

Average, $2.25 per sq. ft. of radiation, according to conditions.
Wage—Steamfitters, $9.00 per day.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Wage—Iron workers, bridge and structural, $9.00 per day.
Architectural iron workers, $7.00 per day.

Lumber—(Prices delivered to bldg. site)

Common, $39.00 per M (average).
Com'n O.P. (select, avrg.....$42.50 per M

Flooring—

1 x 6 No. 3—Form lumber	$25.00 per M
1 x 4 No. 1 flooring	68.00 per M
1 x 4 No. 2 flooring	62.00 per M
1 x 4 No. 3 flooring	48.00 per M
1 x 6 No. 2 and better flooring	62.00 per M
1¼ x 4 and 6 No. 2 flooring	65.00 per M

Slash grain—

1 x 4 No. 2 flooring	56.00 per M
1 x 4 No. 3 flooring	50.00 per M

No. 1 common run to

T. & G.	$40.00 per 1000
Lath	6.50 per 1000

Shingles—(Add cartage to prices quoted)

Redwood, No. 1	$1.10 per bdle.
Redwood, No. 2	.90 per bdle.
Red Cedar	1.25 per bdle.

Building Paper—

1 ply per 1000 ft. roll	$6.25
2 ply per 1000 ft. roll	9.60
3 ply per 1000 ft. roll	14.55
Sash cord com. No. 7	1.25 per 100 ft.
Sash cord com. No. 8	1.40 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.30 per 100 ft.
Sash weights cast iron	60.00 Ton

Nails, $4.25 base.

Hardwood Flooring—

⅝x3¼" T & G Maple	$137 M ft.
1⅛x2¼" T & G Maple	140 M ft.
⅞x3½" Sq. Edge Maple	116 M ft.

	⅝x2¼" T&G	¾x2" T&G	⅞x2" Sq. Ed
Clr. Qtd. Oak	$179 M	$124.00 M	$156 M
Sel. Qtd. Oak	135 M	92.50 M	114 M
Clr. Pla. Oak	140 M	92.50 M	114 M
Sel. Pla. Oak	124 M	80.00 M	97 M
Clear Maple	135 M	81.00 M	
Orlon	140 M	100.00 M	100 M
Bagac	130 M	90.00 M	90 M
Laying and Finishing	16c ft.	15c ft.	13c ft.

Wage—Floor layers $9.35 per day.

Millwork—
O. P., $100 and up per 1000. R. W., $120 and up per 1000.
Double hung box window frames, average) with trim, $8.00 and up, each.
Doors, including trim (single panel), $10.50 and up, each.
Doors, including trim (five panel), $8.50 each.
Screen doors, $3.50 each.
Cases for kitchen pantries seven feet high, per lineal foot, $7.50 each.
Dining room cases, $8.00 per lineal foot.
Labor—Rough carpentry, warehouse heavy framing (average) $16 per m.
For smaller work, average, $28.00 to $35.00 per 1000.
Wage—Carpenters, $8.00 per day.
Laborers—$5.00 per day.

Marble—(Not set), add 40c to 60c per ft. for setting.

Columbia	$1.60 sq. ft.
Alaska	1.60 sq. ft.
San Saba	3.15 sq. ft.
Tennessee	2.00 sq. ft.
Verde Antique	3.75 sq. ft.
Westfield Green	3.50 sq. ft.

Wages—Marble setters, $8.00 per day; helpers, $5.50 per day. Marble polishers and finishers, $6.00 per day.

Painting—

Two-coat work	30c per yard
Three-coat work	45c per yard
Whitewashing	5c per yard
Cold water painting	9c per yard

Turpentine, $1.20 per gal. in cases and $1.05 per gal. in tanks.
Raw Linseed oil....$1.05 per gal. in bbls.
Boiled Linseed Oil.. 1.10 per gal. in bbls.
Pioneer white and red lead, 11¾c lb. in one-ton purchases; 12c lb. for less than 500 lbs.
Wage—Painters, $8.00 per day.
Note — Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.50 lineal foot
8-inch	1.75 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Pipe Casings—14" (average), $7.50 each.

Plastering—(Including Lathing)
Interior, on wood lath, 65c per yard.
Interior, on metal lath, $1.25 per yard.
Exterior, on brick or concrete, $1.30 per yard.
Portland White, $1.75.
Interior on brick or terra cotta, 60c to 70c per yard.
Exterior, on metal lath, $1.85 to $2.25 per yard.
Wood lath, $7.00 a yard per 1000.
Metal studding, $1.25 to $1.50 per yard.
Suspended ceiling and walls (metal furring, lathing and plastering), $2.00 per yard.
Galv. metal lath, 33c and up per yard, according to gauge and weight.
Lime, f. o. b. S. F. warehouse, $2.50 bbl.
Lime, bulk, per ton of 2000 lbs., $19.50
Hardwall plaster, $15.40 per ton, f. o. b. warehouse. (Rebate on sacks, 15c.)
Finishing plaster (carload lots), $19.00.
Hydrate of lime, $19.50 per ton, f. o. b. warehouse.
Wage—Plasterers, $10.00 per day.
Lathers, $8.00 per day.
Hod carriers, $7.00 per day.

Plumbing—
From $70.00 per fixture up, according to grade, quantity and runs.
Wage—Plumbers, $9.00 per day.

Reinforcing Steel—
Base price for car load lots, $3.80 per 100 lbs., f. o. b. cars on docks.
Average cost to install, $25 per ton.
Wage—Housesmiths, $8.00 per day.

Roofing—
Five-ply tar and gravel, $6.25 per square for 30 squares or over.
Less than 30 squares, $6.50 per square.
Tile, $35.00 to $50.00 per square.
Redwood Shingles, $12.00 per square in place.
Cedar Shingles, $12.00 per sq. in place.
Reinf'd Pabco, 7 yr. roof, $7.50 per sq.
Reinf'd Pabco, 10 yr. roof, $10.25 per sq.
Reinf'd Pabco, 20 yr. roof, $13.50 per sq.
Recoat, with Gravel, $3.00 per square.
Wage—Roofers, $8.00 per day.

Sheet Metal—
Windows—Metal, $2.00 a square foot.
Fire doors, (average), including hardware, $2.30 per sq. ft.

Skylights—
Copper,$1.25 a square foot (not glazed)
Galvanized iron, 35c a square foot (not glazed).
Wage—Sheet metal workers, $8.50 per day.

Stone—
Granite, average $7.50 sq. ft. in place.
Sandstone, average Blue, $4.75; Bosie, $2.80 sq. ft. in place.
Indiana Limestone, $3.00 per sq. ft. in place.
Wage—Stone cutters, $8.00 per day.
Stone setters, $8.50 per day.

Store Fronts—
Copper sash bars for store fronts, corner, center and around sides, will average 85c per lin. ft.
Note—Consult with agents.

Structural Steel—$115 per ton (erected).
This quotation is an average for comparatively small quantities.
Light truss work higher; plain beam and column work in large quantities, less.
Cost of steel for average building (erected), $110 per ton.

Steel Sash—
All makes, from S. F. stock, 26c to 34c per sq. ft.
All makes, plant shipment, 28c to 34c per sq. ft.
(Includes mullions and hardware.)

Tile—White glazed, 80c per foot.
White floor, 80c per foot.
Colored floor tile, $1.00 per foot.
Promenade tile, $1.00 per sq. ft. laid.
Wage—Tilesetters, $8.50 per day.

Asphalt Simplifications Effective January

After January 1, 1924, "Too many asphalt grades" no longer will be the complaint of public highway officials, engineers, contractors, and producers, the Department of Commerce having announced that upon that date, the recommendations adopted at its recent asphalt paving conference, will become effective and asphalt grades for use in the construction of sheet asphalt, asphaltic concrete, asphalt macadam, and surface-treated pavements will be reduced from 88 to 9. The number of asphalt grades used as joint filler in the construction of brick and block pavements and various other types has likewise been reduced from 14 to 4.

A complete report of the conference at which the reduction in the number of asphalt varieties was adopted is in process of printing and will be published about December 1 by the Department of Commerce as one of its series on "Elimination of Waste in Industry." It will be entitled "Simplified Practice Recommendation No. 4—Asphalt," and can be obtained from the Superintendent of Documents, Government Printing Office at Washington, at five cents per copy.

The following table gives the penetration limits as adopted:

1. For Construction of Sheet Asphalt, Asphaltic Concrete, and Asphalt Macadam Pavements, and also for Surface Treatment:

Penetration Limits		
25 to 30	50 to 60	100 to 120
30 to 40	60 to 70	120 to 150
40 to 50	85 to 100	150 to 200

2. For Joint Filler for Various Types of Construction:

Penetration Limits	
30 to 50	60 to 70
50 to 60	85 to 100

The first is used primarily for brick pavements, and does not require the admixture of sand, whereas the latter three which are identical with three of the grades adopted for asphalt pavement construction, are those which would ordinarily be used in admixture with sand to produce an asphalt grout.

3. In adopting these limits, it is understood that the producer will furnish asphalts with penetration equal to the midpoint in each range, a plus and minus tolerance from that midpoint being acceptable to all parties, but in no case shall the deviation exceed the limits of the grade specified.

Oakland Church

Architects John Galen Howard & Associates of San Francisco, are preparing plans for the proposed new edifice for the First Congregational church at 26th and Harrison streets, Oakland. The building will cost $500,000 or more.

The Best Costs No More

Specify

PERFECTION BRAND OAK FLOORING

nationally known for its high quality and perfect manufacture.

Charming Vistas

through small home or mansion are achieved only thru the use of perfect Oak floors. The velvety lustre of "Perfection" gives tone and individuality to every interior.

Specify PERFECTION OAK FLOORING

IT GUARANTEES THE HIGHEST SATISFACTION — ITS COST IS AS LOW AS ANY.

WhiteBrothers

Hardwood Headquarters

Northern California Distributors

5th AND BRANNAN STREETS
San Francisco

SERVICE

TESTING
INSPECTION
CONSULTATION
PRODUCTION

Structural and Engineering Materials

ROBERT W. HUNT CO.
ENGINEERS
Chemical and Physical Testing Laboratories

New York Chicago Pittsburgh
St. Louis San Francisco Mexico City
London Montreal

PERMALIGHT

FLAT MILL WHITE

A Snow White Paint in Oil, giving equal opacity of cold water paints. Can be applied with spraying machines at a small increase of cost over water paints for use in factories, warehouses, loft buildings, laundries.

Hill, Hubbell & Co.
TECHNICAL PAINTS
SAN FRANCISCO
Los Angeles Portland Seattle New York

American Construction Council

The American Construction Council recently announced the creation of a committee on apprenticeship, vocational guidance, and craftsmanship with Mr. F. W. Walker, Secretary of the Associated Tile Manufacturers, Beaver Falls, Pa., as its chairman, stating that the complete personnel of this committee would be announced shortly. This committee cooperates with employees' and employers' organizations, building congresses, and all other elements in the construction industry, and with the educational bodies, local and national, in providing for apprenticeship which will be attractive to young men and will afford the fullest means for the employment and training of efficient workers as apprentices, and will produce the skilled workmen needed in the construction industry.

Tokyo Building Company

A huge building construction company is being organized in Tokyo for the purpose of undertaking the construction of commercial and industrial buildings on the unit basis, says a report received by the Far Eastern Division of the Department of Commerce from its representative at Tokyo. This company plans to specialize in four story reinforced concrete buildings designed to withstand earthquake shocks. Such material as cannot be obtained locally or which cannot be supplied in standard specifications will be obtained abroad, it is announced.

Funds for the promotion of this new company will, according to present plans, be obtained in large part from the Government at a low interest rate. At present the company is marking time awaiting the announcement of the plans of the Capital Restoration Board as to the areas set aside for industrial and business purposes, etc.

Appointed Safety Engineer

Mr. Edward G. Sheibley, who graduated from Stanford University in 1908 as a civil engineer, with a degree of A. B., and who has a master's degree in civil engineering from Harvard, has been appointed chief safety engineer of the safety department of the State Industrial Accident Commission to succeed Mr. H. M. Wolflin, resigned.

Mr. G. Chester Brown, formerly with the safety department of the Industrial Accident Commission and recently employed with the State Compensation Insurance Fund as mining engineer, has been transferred to the safety department of the Industrial Accident Commission, in charge of the mining division.

Wayne Company Wins Suit

A decision recenty handed down from the bench in the United States district court, Detroit, declares the patent of the Permutit Company, of New York, on their zeolite water softening system, absolutely void.

The case is one of the most important patent suits in recent years. The suit was brought by the Permutit Company to restrain the Wayne Tank & Pump Company, of Fort Wayne, Ind., patent infringement being claimed.

The Wayne Tank & Pump Company has attained a leading position in the water softening industry. It manufactures both domestic and industrial water softening systems, many of the latter having been supplied to this field.

Judge Arthur J. Tuttle, who devoted nine days to the hearing, was aided by his knowledge of the German language. Much of the testimony was given by witnesses brought here from Germany, by both plaintiff and defendant.

Judge Tuttle declared, in his decision, that August Neumann, a civil engineer and filter manufacturer, of Reppen, Germany, and the star witness for the defendant, had originated the first commercially successful zeolite water softener.

He further held that the Permutit Company had no more right to the exclusive use of the mineral known as zeolite, and in this country dug out of the ground in New Jersey, than a man would have to a patent on "water running down hill."

Excerpts from the decision follow:

"I started out with the presumption that this patent (The Permutit Patent) was valid," said Judge Tuttle. . . . That put the burden on the other people (The Wayne Tank & Pump Company.) . . . That burden shifted early in the case, because in the hearing here early, I began to discover the indefiniteness, the uncertainity and the unsatisfactory things about the patent in suit (The Permutit Patent).

"The reason this case has taken nine long days is because I have seen this matter in a way that did not coincide with the decision in the second Circuit, and I have been reluctant to reach a decision which is contrary to the decision reached there.

"I have had much to help me which that court did not have. I have had more testimony. I have new testimony.

" . . and my decision is that the patent is void.

" . . . The patent in suit is no more entitled to the credit for the property possessed by zeolites than a man is entitled to credit for making water run down hill, or entitled to a patent on gravity. It is a natural property known to the world, known to the art (of water softening), prior to the time of the patent in suit."

Architect Moves

Architect John R. Kibbey has moved his office from 826 Loew State building, to room 37, Busch building, 660 S. Vermont avenue, Los Angeles.

Frost National Bank — Sanguinet & Staats Architects

Frost National Bank

San Antonio, Texas

equipped with

FRINK REFLECTORS

Including

Continuous Screen Reflectors
Polaralite Signs

Our Engineering Department is co-operating with the leading architects in laying out and designing the lighting of prominent buildings throughout the country. We hope we can be of service to you.

"Specify Frink Reflectors"

I. P. FRINK, Inc.

SAN FRANCISCO, CAL.,
77 O'Farrell Street
24th Street and 10th Avenue,
New York

Chicago, Ill.
Monadnock Bldg.
Boston, Mass.
161 Summer St.
Detroit, Mich.
325 State St.
Cleveland, Ohio
992 The Arcade
Buffalo, N. Y.
310 Mutual Life Bldg.
St. Louis, Mo.
1415 Pine Street
Seattle, Wash.
609 Seaboard Bldg.
Philadelphia, Pa.
Franklin Trust Bldg.
Cincinnati, Ohio
601 Second Nat'l. Bank Bldg.
Louisville, Ky.
415 West Main St.
Birmingham, Ala.
426 Jefferson Co. Bank Bldg.
Atlanta, Ga.
1526 Candler Bldg.

Canada
Associated with Robert Mitchell Co. Ltd.
64 Belair Avenue, Montreal

MATCHES IN BEAUTY AND FINISH THE FINEST FURNISHINGS

This beautiful square tube "California" Wall Bed in either walnut or mahogany finish hung on a "California" Secret Installation door is the latest in design and finish of wall bed construction. The "California" Secret Installation solves the problem of having too many doors and windows and at the same time conforms to the most modern ideas in wall decoration.

Write for Complete Data and Specifications

CALIFORNIA WALL BED COMPANY

714 Market Street, San Francisco

165 Thirteenth Street, Oakland 1040 S. Broadway, Los Angeles

The Ornamentation on the Vase and Plaque was

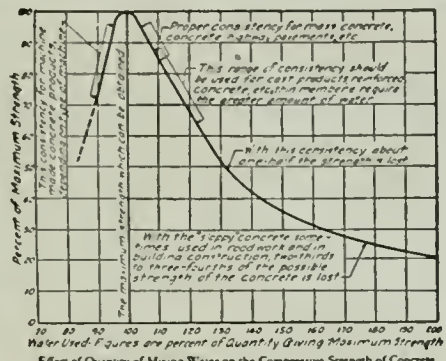
SAND BLASTED *with*

FAN SHELL BEACH SAND

ONE OF THE WHITE SANDS SHIPPED BY

DEL MONTE PROPERTIES COMPANY

Phone Sutter 6130 401 CROCKER BUILDING San Francisco


Proper consistency for mass concrete, concrete pipes, pavements, etc.
This range of consistency should be used for cast products reinforced concrete, slender members require the greater amount of water
With this consistency about one-half the strength is lost
With the "sloppy" concrete sometimes used in road work and in building construction, two-thirds to three-fourths of the possible strength of the concrete is lost
The maximum strength which can be obtained
Percent of Maximum Strength
Water Used: Figures are percent of Quantity Giving Maximum Strength

Effect of Quantity of Mixing Water on the Compressive Strength of Concrete
NOTE In general construction, the maximum strength can rarely be obtained, but it is possible to obtain 70 to 90 per cent of the maximum strength without additional expense by restricting the quantity of mixing water.

When One Pint of Water Wastes Two Pounds of Cement

Observe this curve closely. It shows impressively the effect of the quantity of mixing water on the strength of concrete.

It is now known that excess mixing water, not only weakens concrete, but that it is actually wasteful of cement. One pint of water more than necessary in a one-bag batch decreases the strength and resistance to wear as much as though two or three pounds of cement were left out.

Here is a fact, which if brought home to the superintendent and the foreman, can be of great practical value in raising quality on the job.

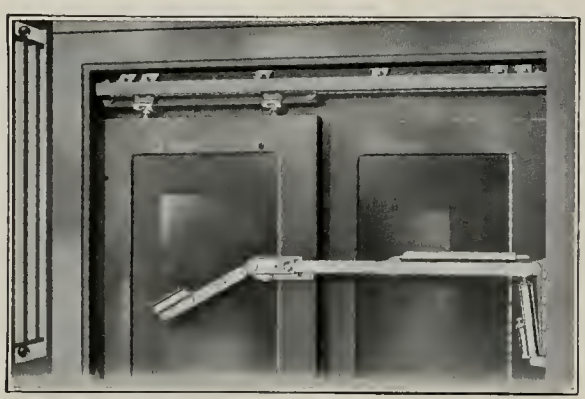
Wouldn't you like to have, right at hand for quick reference, a practical manual which tells how the quantity of mixing water can be closely controlled, so as to give concrete greater strength without using any more cement?

Then write today for our free booklet, "Concrete Data for Engineers and Architects." We will be glad to send you extra copies for superintendents and foremen.

Take full advantage of the service the Portland Cement Association has to offer. One of the District Offices of the Association is always near you. Get acquainted with it.

PORTLAND CEMENT ASSOCIATION
A National Organization to Improve and Extend the Uses of Concrete

Atlanta	Denver	Kansas City	New York	San Francisco
Birmingham	Des Moines	Los Angeles	Parkersburg	Seattle
Boston	Detroit	Memphis	Philadelphia	St. Louis
Chicago	Helena	Milwaukee	Pittsburgh	Vancouver, B.C.
Dallas	Indianapolis	Minneapolis	Portland, Oreg.	Washington, D.C.
	Jacksonville	New Orleans	Salt Lake City	



From Coast to Coast

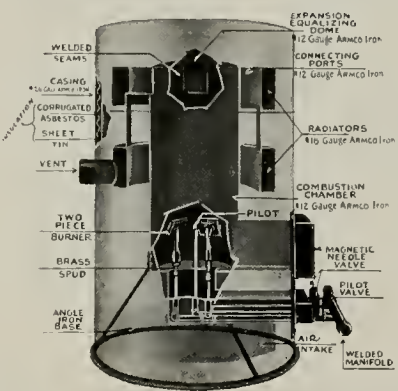
the most famous buildings are using R-W "IDEAL" Elevator Door Hardware. "IDEAL" Hardware has become **standard** high grade elevator door equipment for the finest office, hotel and apartment buildings. Safe, efficient and **silent** in operation. It includes automatic controller and check, and hangers for all standard types of doors. Architects will find our catalog EE-21 a valuable addition to their reference files. Write for your copy.

"IDEAL" Elevator Door Hardware

Richards-Wilcox Mfg. Co.
A Hanger for any Door that Slides
AURORA, ILLINOIS, U.S.A.
Minneapolis Chicago New York Cleveland Los Angeles
Philadelphia Boston St. Louis Indianapolis San Francisco
RICHARDS-WILCOX CANADIAN CO LTD
Winnipeg LONDON, ONT Montreal

San Francisco Office: 525 Market Street

The Electrically Controlled--Gas Fired McLAUGHLIN FURNACE



burns gas within a Welded Armco Iron Combustion Chamber.

The "Double Radiator" extracts 88% of B. T. U. input, reducing flue gas temperatures from 400 deg. to 300 deg. F. (Smith, Emery & Co. test).

Each of the **Three Separate Burners** is controlled by Magnetic Valves and always consume a constant quantity of gas.

Write for Information

McLAUGHLIN METAL WORKS
223 J Street, Sacramento, Calif.

San Francisco W. P. Goss	Stockton Willard Hardware Co.	Fresno Evans Heating Co.	Chico Hall Metal Works

Quantity Survey Unit

AT the October meeting of members of the San Francisco General Contractors Association, the board of directors was authorized to organize a quantity survey bureau and to use the funds of the organization to underwrite the same with the understanding that the bureau is to be made self-sustaining and that the funds of the association shall be reimbursed for any expenditures therefrom in this behalf. The recommendation of the special committee on safety bureau that a safety engineer be employed to inspect work under construction by members in the interest of accident prevention was referred to the board of directors with power to act. In this connection it was reported that, under the system of preferential rating in vogue, members were paying as high as 90 per cent above the manual and other members as low as 23 per cent below the manual. The question of forming an inter-insurance exchange to carry members liability insurance and the matter of forming a co-operative bonding company were briefly considered.

An Example for California Contractors

Civic pride has caused the owners of the $15,000,000 thirty-two story Straus building in Chicago to erect the most beautiful ornamental barricade ever used in Middle West building construction.

This barricade is proof that such a protective canopy need not be unsightly. For years there has been a tendency on the part of architects and the public to resent the inconvenience and ugly appearance attendant upon the erection of a skyscraper in the downtown area.

In times past to walk along side a building under construction was a hazardous undertaking because of insufficient protection to pedestrians. Further inconvenience was caused by material being piled high in the streets without regard to traffic conditions.

A new stage of progress was reached when barricades were built more substantially but the latest stage was developed when S. W. Straus & Co. instructed their architects to build a beautiful as well as substantial barricade.

The Straus barricade has beautiful archways and wide pathways without the interruption of disturbing wooden columns. It is painted in pleasing colors harmonizing with the general effect of Michigan avenue.

Contractors have wondered at the additional cost, but investigation has shown that the cost of a beautiful barricade used during the erection of a building is only slightly greater than the cost of an ugly timber bridge, unpainted and awkard in construction.

Apartment House at 655 Powell Street, San Francisco, for Oser Estate.

Hauser Casement Windows

Specified and used—Hyman and Appleton, Architects; Hays-Oser Company, Builders.

DURABLE, EFFICIENT
ECONOMICAL

HAUSER WINDOW CO.
Factory, Office and Show Rooms:
1362 Harrison St., San Francisco
Phone Hemlock 1062

H. RUMPF
CONTRACTING DECORATOR
CUSTOM BUILT FURNITURE
DRAPERIES AND FURNISHINGS

School and Theater Equipment
Drop Curtains, Draperies

Specializing in Furnishings for Hotels, Lodges, Clubs, Steamships, Apartment Houses.

Estimates Furnished

567 HOWARD STREET, SAN FRANCISCO, CALIF.

Robertson Ventilators Pull

Here are the reasons and proof why the Robertson Ventilator is the best manufactured:

150% to 160% more air exhausted through wind action, alone, than through an open pipe.

95% as good as an open pipe where there is no wind.

Positively no back draft from winds deflected upward by sloping roofs because of the patented Robertson wind baffle—an exclusive feature.

Send for descriptive pamph'et and price list

H. H. ROBERTSON CO.

H. M. HOLWAY, District Manager
1007 Hobart Building, San Francisco
600 Metropolitan Building, Los Angeles

IMPERIAL
WATERPROOFING

Will Keep Out Moisture and Dampness

Trade **WATERX** Mark

If your building is leaking through the walls or around the windows, or if the Basement walls are wet below ground—call up SUTTER 978.

IMPERIAL WATERPROOFING is manufactured by BROOKS & DOERR, 460 7th St., San Francisco

1002-04 Merchants National Bank Building
Phone Sutter 978
SAN FRANCISCO, CAL.

CORROSIRON

the acid-proof drain pipe

Make your acid drain lines permanent -:- -:-

Corrosiron drain pipe and fittings manufactured and carried in stock in San Francisco

PACIFIC FOUNDRY COMPANY

Harrison and Eighteenth Streets
SAN FRANCISCO

RETARDO

protects against fire

It insures your client of reasonable protection against fire, both interior and exterior.

RETARDO preserves the surface, beautifies, and is manufactured in all colors and for all purposes.

RETARDO costs no more than ordinary paint, but does more work.

Send for color chart and further information

Fire Retardent Products Co.
2838 Hannah Street Oakland, Calif.

FIRE PREVENTATIVE PAINT

ES
PRODUCTS

ES ELEVATOR DOOR EQUIPMENT

ES PNEUMATIC DOOR OPERATORS

Open and close elevator doors quicker and quieter than by hand.

ES ELEVATOR DOOR CLOSERS

Close the doors by spring pressure. Prevent slamming and ensure doors being locked.

ES ROLLER BEARING HANGERS

Are more durable, quiet and nearly frictionless than ball bearing hangers.

ES POSITIVE ELECTRIC INTERLOCKS

Prevent the starting of the elevator until all the doors are closed and locked.

See Sweet's Architectural Catalog and exhibit at Architects' Samples Corporation (N. Y. C.)

ELEVATOR SUPPLIES COMPANY, INC.

Main Office and Works: HOBOKEN, NEW JERSEY

Branch Offices

CLEVELAND
1039 Walnut Avenue

CHICAGO
111 S. Jefferson Street

SAN FRANCISCO
186 Fifth Street

LOS ANGELES
1120 S. Hope St.

PHILADELPHIA
1714 Ludlow Street

ST. LOUIS
Railway Exchange Bldg.

House at Cornwall-on-Hudson, N. Y. Finished with Old Virginia White. Rogers & Zogbaum, Architects, New York

Cabot's
Old Virginia White

A Soft, Brilliant White for Shingles, Siding and Similar Woodwork. As Bright and Clean as New Whitewash, and as lasting as Paint.

Architects and others have tried for years to get a paint that would give the same beautiful, brilliant white as new whitewash, and would also be durable and clean and not rub off like whitewash. But paint was always "painty"—hard, cold and heavy. Old Virginia White is a shingle-stain compound that has solved the problem. It is as clean, cool and brilliant as fresh whitewash, and as lasting as paint; but it is not messy like whitewash, nor painty like paint, although it costs less and goes farther than paint.

Send for Sample Shingle and Circular showing other fine houses finished with Old Virginia White

SAMUEL CABOT, Inc., Mfg. Chemists, Boston, Mass.

Cabot's Creosote Stains, Stucco and Brick Stains, "Quilt," Mortar Colors, Dampproofing, Waterproofing, Conservo Wood Preservative, etc.

Pacific Materials Co., San Francisco
Waterhouse-Wilcox Pacific Co., Los Angeles
Theo. F. Snyder, San Diego, Cal.
S. W. R. Dally, Seattle
Cress & Co., Portland
H. G. Lanahan & Co., Spokane, Wash.

SHOWER
BATH STALL
MARBLE BATHS
have been in use since the days of Old Rome. They are rich in attractiveness, easy to keep clean, and they never wear out. They can be installed in old buildings as well as new, and the cost, reckoned by years of service, is extremely low.
VERMONT MARBLE COMPANY
San Francisco
Tacoma
PROCTOR,
Vermont
GOOD FOR ALL TIME
VERMONT MARBLE

Cast Iron Stairs and Store Fronts

Bank and Office Railings, Elevator Enclosures and Fire Escapes

C. J. HILLARD & CO., Inc.
Nineteenth and Minnesota Streets
Telephone Mission 1763
SAN FRANCISCO, CALIF.

DEPENDABILITY
"Since 1858"

LINOLEUMS
WINDOW SHADES

Carpets
Draperies
Rugs

Estimates furnished

D. N. & E.
Walter & Co.

562-572 Mission Street
SAN FRANCISCO
Los Angeles Portland Seattle

Sacramento County Court House,
Sacramento, Cal.

Specify

COLUMBIA MARBLE

Samples and complete information relative to the use of Columbia Marble sent upon request.

COLUMBIA MARBLE CO.
413 Rialto Building, San Francisco
Telephone Sutter 1244

TANKS DEPENDABLE PUMPS

BOWSER ESTABLISHED 1885

Experience with Pacific Coast conditions, coupled with diversified experience on every sort and size of installation, whether for handling gasoline and oil or affecting economic lubrication—

Experience that will help you better serve the owner—

Experience that can be had only upon application to this house, which opened its first Pacific Coast branches in 1908.

Tell us your problem, and we will go to work —without obligation, of course.

S.F. BOWSER & COMPANY, Inc.
Pump and Tank Headquarters
FORT WAYNE, INDIANA.
Sales and Service Offices and Representatives Everywhere

722-3 New Bank of Italy Building, Los Angeles *612 Howard St., San Francisco*

Evans Vanishing Door

Wardrobes are the practical and efficient installation for the saving of floor space, lowering the cost of construction and upkeep, and making for the convenience and sanitation of THE MODERN SCHOOL.

WARDROBES, Class E, have Laminated Backs, Ends and Divisions, and with Evans Process Hollow Sanitary Doors, hung on double pivoted arms, without guides, tracks or rollers, swing easily and silently. They cannot stick or bind. Made with or without Blackboards. Hardware can also be purchased separately.

More Than a Million Hang Their Wraps in Evans Vanishing Door Wardrobes

Trade Mark
VANISHING DOOR
U. S. Reg.

Catalog
"PICTURES THAT TALK"
Sent on Request

W. L. EVANS 700 Block B **Washington, Ind.**

Buy This BETTER Water Heater

Better because it gives Perfect Hot Water Service—instantaneous, inexhaustible and inexpensive—not just once in a while, but all the time—
Better because it is simply made—
Better because it is solidly and ruggedly built—
Better because it is made by men whose experience dates back to 1889, when the world's first successful automatic water heater—a RUUD—was built.
EveryRUUD is equipped with an internal automatic thermostat, double fuel control, condensation sheds.

RUUD HEATER CO.
431 Sutter St. San Francisco
Phone Sutter 1640

Alvaline, Cementoline
and other
Jones-Duncan Products

MAGNER BROTHERS
PAINT MAKERS

Telephone: Market 113

414-424 Ninth St. San Francisco

HEATING-PLUMBING

COMPLETE PLUMBING AND HEATING SYSTEMS INSTALLED IN ALL CLASSES OF BUILDINGS — ALSO POWER PLANTS

GILLEY-SCHMID CO., Inc.
198 OTIS ST., SAN FRANCISCO
Tel. MARKET 965

THE TORMEY CO.

General
Painters

Phone Franklin
5 - 5 - 9 - 8

1042 Larkin St., San Francisco, Cal.

Phone Sutter 1414

Hunter & Hudson
ENGINEERS

Designers of Heating, Ventilating and Wiring Systems, Mechanical and Electrical Equipment of Buildings

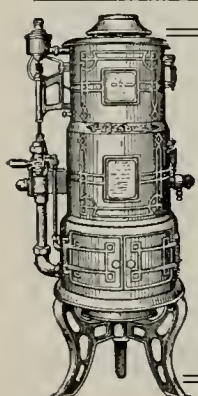
703 Rialto Bldg., San Francisco, Cal.

ELEVATOR ACCESSORIES

We manufacture and install pneumatic elevator door controls and interlocks. (A safety first equipment which has been making good for over ten years.) For information concerning elevator safety and economy we cordially invite you to call

RANDALL CONTROL AND HYDROMETRIC CORPORATION

523 Central Bldg. Los Angeles, Cal. Phone 11901
265A Minna St. San Francisco, Cal. Phone Douglas 2397



Pittsburg

It Insures
Instant
Hot Water
Service

PITTSBURG WATER HEATER COMPANY
478 Sutter S., San Francisco
Phone Sutter 5025

RUSSWIN

BUILDERS' HARDWARE

JOOST BROS., Inc.

SAN FRANCISCO AGENTS

We Carry Complete Stock:
Fishing Tackle—Guns—Mechanics' Tools—Paints—Crockery and Glassware—Stoves—Household Goods. Telepbone Market 891.

NO BRANCH STORE

Mazda Lamps Electric Goods

PACIFIC MANUFACTURING COMPANY
MILL WORK, SASH AND DOORS
HARDWOOD INTERIOR TRIM A SPECIALTY
MAIN OFFICE: SANTA CLARA, CALIFORNIA
SAN FRANCISCO, 177 Stevenson Street — LOS ANGELES, 908 Washington Building
OAKLAND, 1001 Franklin Street — SAN JOSE, 16 North First Street

LARSEN-SIEGRIST CO., Inc.
BUILDING CONSTRUCTION
807 Claus Spreckels Building — SAN FRANCISCO

HEATING — PLUMBING
VENTILATION — SHEET METAL WORK
FLOOR AND WALL TILING
SCOTT CO., INC.
243 MINNA STREET — SAN FRANCISCO

VAN EMON ELEVATOR COMPANY
PASSENGER ELEVATORS FREIGHT
1159-65 Howard Street — Market 808 — San Francisco, Calif.

THE HERMANN SAFE CO.
Manufacturers of Fire and Burglar Proof Safes, Vaults and Safe Deposit Boxes
Also Representatives for the
YORK SAFE & LOCK CO. OF YORK, PA.
216-224 Fremont Street — San Francisco, Cal.

Res. Tel. Merritt 3600
HERBERT BECKWITH
Building Construction
Formerly with ARTHUR ARLETT — Everson Building OAKLAND

JOHN M. BARTLETT
GENERAL CONTRACTOR
Office 357 - 12th ST. OAKLAND — Phone Lakeside 6750 — Res. Phone Berkeley 6884W

For Information on Public Seating *Consult*
WESTERN STATES SEATING COMPANY
39 Second Street, San Francisco — 2133 Kern Street, Fresno, Calif. — 1040 So. Broadway, Los Angeles, Calif.

When writing to Advertisers please mention this magazine.

SCHOOL AND THEATRE EQUIPMENT
FLAGG STUDIOS SAN FRANCISCO LOS ANGELES
DESIGNERS AND MANUFACTURERS
Drop Curtains, Automatic Hoists
Stage Hardware, Scenery
"Hitch Your Desires to Our Experience"

Phone Franklin 548
I. R. KISSEL
Decorator, Painter and Paperhanger
1747 SACRAMENTO ST., Bet. Polk St. and Van Ness Ave., SAN FRANCISCO

ROBERT TROST
PHONE MISSION 2209
General Building Contractor
We Specialize in High Grade Work and Employ Skilled Labor in every Branch of the Building Industry.
26th and Howard Streets
SAN FRANCISCO

Phone Sutter 1533
ALFRED H. VOGT
GENERAL CONTRACTOR CONCRETE CONSTRUCTION
185 Stevenson Street, San Francisco

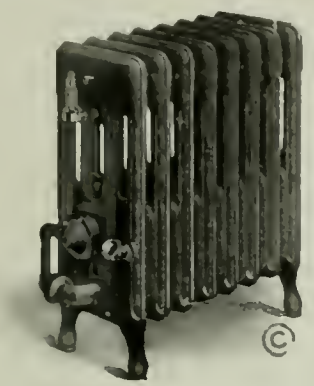
LAWTON & VEZEY
CONTRACTORS AND BUILDERS
EVERSON BUILDING OAKLAND, CALIFORNIA

MONSON BROS.
Building Construction
Yard
Mariposa and Bryant Streets
Phone Market 2963
251 Kearny Street, San Francisco
Telephone Douglas 6619

PETERS CONSTRUCTION CO.
GENERAL CONTRACTORS
705 Atlas Building
604 MISSION ST., SAN FRANCISCO
Phone Douglas 9063
Builders' Exchange
351-12th ST., OAKLAND
Phone Lakeside 6750

HANNAH BROS.
CONTRACTORS AND BUILDERS
142 Sansome Street, San Francisco
Members Builders Exchange
Phone Douglas 1577

When writing to Advertisers please mention this magazine.



"Williams Service"

Complete Steam Heating Installation

Employing Clow Gasteam Radiators
in Apartments, Schools, Churches, Residences, Commercial Buildings
Perfect Heat — Automatic Control
No Odor — Normal Humidity

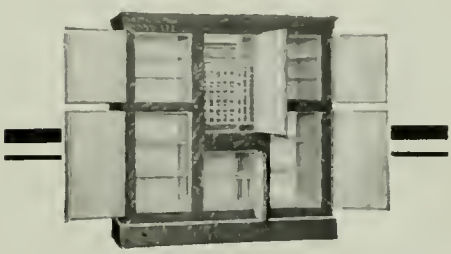
Williams Radiator Company
571 MISSION STREET
Telephone Douglas 8230 SAN FRANCISCO

McCRAY
REFRIGERATORS *for* ALL PURPOSES

Send a sketch of your client's requirements and McCray engineers will gladly submit, without obligation, plans for specially built refrigeration equipment to meet particular needs. We carry in stock, for prompt shipment, refrigerators of all sizes and types.
Get the latest McCray catalogs for your files.

No. 95—for Residences No. 64—for Markets
No. 72—for Grocers No. 75—for Florists
No. 53—for Hotels and Institutions

McCRAY REFRIGERATOR CO.
2363 LAKE STREET
KENDALLVILLE, IND.
San Francisco Office, 765 Mission Street



For large residences

Specify

TRADE **MINWAX** MARK

Brick and Cement Coating for Exterior Brick and Plastered Walls

A permanent coating that is absolutely waterproof and positively will not flake, peel or craze.

Waterproof your buildings while they are dry

Send for Booklet on Products, Data and Specifications

MINWAX CO., INC.

K. M. HAYDEN
22 Battery St.
San Francisco

W. C. LEA
653 So. Clarence St.
Los Angeles

VLAARITE ENAMEL

The highest quality white finish it is possible to produce.

VLAARITE Enamel produces an ideal enamel finish that will be a credit to the finest residence or public building interiors.

Specify

Vlaarite

Oakley Paint Mfg Co.

Paints, Varnishes, Enamels

727 Antonio Street, Los Angeles
833 Hearst Bldg., San Francisco

I. M. SOMMER & CO.
ENGINEERS AND GENERAL CONTRACTORS
CONCRETE CONSTRUCTION
Phone Hemlock 1100
901 BRYANT ST., SAN FRANCISCO

K. E. PARKER COMPANY, Inc.
GENERAL CONTRACTORS
Phone Sutter 5661
Room 515 Clunie Building, SAN FRANCISCO

R. W. LITTLEFIELD
Building Construction
357 12th Street, Room 9, Oakland, Cal.
Phone Lakeside 6750

H. H. HILP, Jr.
J. FRANK BARRETT
BARRETT & HILP
CONCRETE CONSTRUCTION BUILDERS GENERAL CONTRACTORS
918 HARRISON STREET, near 5th, SAN FRANCISCO
Telephone DOUGLAS 700

CAEN STONE
A refined, elegant, interior finish.
A. KNOWLES
CONTRACTOR AND PLASTERER
442 Call-Post Building
San Francisco

STEELFORMS Signify ECONOMY, RAPIDITY, and EFFICIENCY
STEELFORM CONTRACTING COMPANY
STEELFORMS FOR CONCRETE BUILDINGS
C. B. Hopkins, C. E., Manager
681 Market Street, San Francisco
CONCRETE JOIST FLOOR CONSTRUCTION

Phone Piedmont 2079W
DAVID NORDSTROM
GENERAL CONTRACTOR
4146 Emerald Street, Oakland

M. E. VUKICEVICH
SPENCER B. BAGGE
VUKICEVICH & BAGGE
GENERAL CONTRACTORS
Phone Sutter 5691
815 Bryant Street, San Francisco

When writing to Advertisers please mention this magazine.

432 Bryant St.
SAN FRANCISCO
Douglas 2676

Standard Fence Co.

60th and Lowell Sts.
OAKLAND
Tel. Piedmont 646

WIRE AND IRON WORKS

DESIGNERS—BUILDERS
HOME AND ESTATE FENCE
AVIARY and TENNIS COURT FENCE

WIRE GRILL WORK—WIRE SCREEN
FLEXIBLE WIRE CONVEYOR BELT
WIRE SPECIALTIES

1922 Santa Fe Avenue, Los Angeles, Cal. Phone 67188

Steel Bars

FOR CONCRETE REINFORCEMENT
Cut to Length, Fabricated, Installed

Tel. Douglas 3466 BADT-FALK & CO.
346 Call-Post Bldg., 74 New Montgomery St., San Francisco

SPENCER ELEVATOR COMPANY — W — WESTINGHOUSE EQUIPMENT — SAN FRANCISCO CAL.

Passenger and Freight Elevators

For Every Service
SPENCER ELEVATOR COMPANY
166-180 Seventh Street San Francisco

PACIFIC DEPARTMENT
GLOBE INDEMNITY COMPANY
Bonds and Casualty Insurance for Contractors
FRANK M. HALL, formerly Robertson & Hall, Mgr.
444 California Street Phone Sutter 2280 SAN FRANCISCO

CARL H. PETERSON
BUILDER
PHONE DOUGLAS 1876 185 STEVENSON STREET SAN FRANCISCO

PHONE DOUGLAS 2370
R. McLERAN & CO.
GENERAL CONTRACTORS
HEARST BUILDING SAN FRANCISCO, CAL.

D. ZELINSKY & SONS
PAINTERS AND DECORATORS
165 GROVE STREET SAN FRANCISCO

FLOWERING EUCALYPTUS
The Flaming Gum Tree of Australia (Eucalyptus Fecifolio)
A mass of flame-colored bloom through the summer months
LIMITED SUPPLY OF SMALL TREES FOR SALE FOR FALL AND SPRING PLANTING
A. K. Wallis
Telephone Berkeley 671-N 2628 Shattuck Ave. Berkeley, Calif.

When writing to Advertisers please mention this magazine.

TEMPERATURE REGULATION
JOHNSON SERVICE COMPANY

Manufacturers and Installers of JOHNSON Heat Humidity CONTROL
For schools, residences, hospitals, banks, public buildings, also canneries and all kinds of industrial plants—Hot water tank regulators, air and water reducing valves.
Rialto Bldg., SAN FRANCISCO; 605 Van Nuys Bldg., LOS ANGELES

Atlas Heating and Ventilating Co., Inc.
ENGINEERS AND CONTRACTORS
STEAM AND HOT WATER HEATING—PIPE AND PIPELESS FURNACES
SHEET METAL WORK PATENT CHIMNEYS
Everytbing in Heating
Phone Douglas 378 557-567 Fourth Street San Francisco

CLARENCE DRUCKER HERMAN LAWSON
LAWSON & DRUCKER
PLUMBING—HEATING—CONTRACTORS
450 HAYES STREET
TELEPHONE MARKET 275 SAN FRANCISCO, CAL.

H. G. NEWMAN CO.
PLUMBING HEATING
OAKLAND 3329 2004 TELEGRAPH AVENUE OAKLAND

ALEX COLEMAN
CONTRACTING PLUMBER
706 ELLIS STREET, SAN FRANCISCO Phone FRANKLIN 1006

WM. F. WILSON COMPANY
MODERN SANITARY APPLIANCES
Special Systems of Plumbing for Residences, Hotels, Schools, Colleges, Office Buildings, Etc.
Phone Sutter 357 328-330 Mason Street, San Francisco

W. H. PICARD
Plumbing, Heating, Ventilating and Power Plants
5656 College Avenue
5662 Keith Avenue
Piedmont 7522 Oakland, Calif.

JOHN A. PETERSON, President B. HEINRICH, Vice-President
SAN FRANCISCO ELEVATOR CO., Inc.
ELEVATORS
Automatic, Electric, Hydraulic, Belt Power, Automatic Dumbwaiters and Handpower Machines, Push Button Passenger Elevators a Specialty
Telephone Kearny 2443 860 FOLSOM STREET, SAN FRANCISCO

When writing to Advertisers please mention this magazine.

Yards:
Tracy - Brentwood
Patterson - Newman
California

Phones:
Kearny 2073 - 2074

SANTA FE LUMBER CO.

A. J. RUSSELL, Mgr.

Wholesale and Retail

POLES AND PILING
OIL RIG AND SHIP TIMBERS
SAGINAW SPECIAL SHINGLES

LUMBER

FENCE POSTS
SIMPLEX SILOS
PAPEC ENSILAGE CUTTERS

16 California Street San Francisco, Calif.

from tree to consumer

Pine and Redwood Lumber

SASH DOORS AND MILL WORK

SUNSET LUMBER COMPANY

MANUFACTURERS — WHOLESALE AND RETAIL

Main Office and Yards:

FIRST AND OAK STREETS, OAKLAND Phone Oakland 1820

POPE & TALBOT

Manufacturers, Exporters and Dealers in

Lumber, Timber, Piles, Spars, Etc.

Office, Yards and Planing Mills
859-869 THIRD STREET, SAN FRANCISCO, CAL.

Mills: Port Gamble, Port Ludlow and Utsalady, Washington

GUARANTEED

OAK AND MAPLE FLOORING

Insist on "Higgins"—It Costs No More

J. E. HIGGINS LUMBER CO.

SAN FRANCISCO

If It's Hardwood—We Have It

When writing to Advertisers please mention this magazine.

THE HEART OF A BUILDING IS ITS PIPING EQUIPMENT

A complete line for the Piping Features of Buildings — Power, Plumbing, Heating, Ventilating, Refrigerating, Vacuum-Cleaning, Gas, Water, etc.—is furnished by Crane Co. through the Plumbing and Heating trade.

The Architect, Engineer and Builder, or Investor, may enjoy, through the facilities of this Company, the distinct advantage of dealing entirely with one Competent and Responsible House.

Exhibit Rooms, Offices and Warehouses in San Francisco and Oakland and Fifty-one other cities.

CRANE CO.

1855—1918

VALVES and FITTINGS

Genuine Hyloplate Blackboards
Best Pennsylvania Slate Blackboards
School Furniture
Western Venetian Blinds
Lockers

C. F. WEBER & CO.

San Francisco Los Angeles Reno Phoenix

ACORN HARDWOOD FLOORS

Guarantee complete floor satisfaction by specifying

"Acorn Brand" Oak Flooring

Architects and contractors are proving this by actual practice.

Strable Hardwood Co.

HARDWOOD LUMBER

511-545 First St., Oakland, Calif.
Phone Oakland 245

BEAUTIFUL GARDEN EFFECTS for the City and Suburban Home

MacRORIE-McLAREN CO.

Landscape Engineers and General Nurserymen

Office
Suite 301 Phelan Bldg.
San Francisco

Nurseries at
Beresford
San Mateo Co.

SOME INTERESTING

Apartment house plans, hotels and residence work

By H. C. BAUMANN,
Architect

IN THE

January Architect & Engineer

ALSO A PORTFOLIO OF

Perspective Renderings of Public and Private Office Buildings

By F. W. FITZPATRICK,
Consulting Architect

The Foot of Market Street Subway

WILL BE DESCRIBED

By FRANK G. WHITE,
Chief Engineer for the State Harbor Commission

S. & S. TILE CO.

MANUFACTURERS OF
HAND-MADE TILES FOR WALLS AND FLOORS. REPRODUCTIONS OF OLD SPANISH AND MOORISH GLAZED TILES
Factory, 4th and Carrie Sts. San Jose, Cal.

Steam Heating and Power Plant Equipment

JAMES I. KRUEGER

Telephone Sutter 7057

Representative
ILLINOIS ENGINEERING COMPANY
SKIDMORE VACUUM AND BOILER FEED PUMP
EUREKA BRASS WORKS
417 Market St. Suite 320 · San Francisco, Calif.

CHARLES T. PHILLIPS COMPANY

CONSULTING ENGINEERS
HEATING, VENTILATING, ELECTRIC WIRING, PLUMBING
Roberts Building, Los Angeles

CYCLOPS IRON WORKS

ICE MAKING and REFRIGERATING MACHINERY, TRAVELING CRANES
Office and Works: 837-847 FOLSOM ST. SAN FRANCISCO, CAL. Telephone: SUTTER 3030

GRINNELL AUTOMATIC SPRINKLER

GRINNELL COMPANY
OF THE PACIFIC
VALVES PIPE and FITTINGS
ENGINEERS AND CONTRACTORS
453 Mission Street, San Francisco
CHEMICAL FIRE EXTINGUISHERS and FIRE ENGINES

Fire Protection Engineering Company

ENGINEERS AND CONTRACTORS
Executive Offices and Factory
67 MAIN STREET
San Francisco, California
Automatic Sprinkler Systems
Automatic Fire Alarm Systems
Watchman Detector Systems
Chemical Engines
Hand Fire Extinguishers
Motor Driven Fire Apparatus

CLINTON CONSTRUCTION COMPANY

of California
BUILDERS AND MANAGERS OF CONSTRUCTION
923 Folsom Street San Francisco

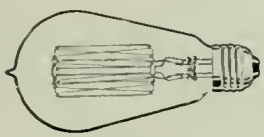
RADIATOR AIR VALVES

Traps, Rapid Riser Vents, Vacuum and Condensation Pumps
They Are Absolutely Guaranteed
JAS. P. MARSH & CO., Represented by HULTING, HURST & HULTING
Monadnock Building (Telephone Sutter 5295), San Francisco, Cal.

When writing to Advertisers please mention this magazine.

ROBERTS MFG. CO.

Lighting Fixtures
Electric Appliances
Incandescent Lamps



WILLYS FARM LIGHTING AND POWER PLANTS

663 Mission Street San Francisco

Chicago Clothes Dryers

Chelsea Dumb Waiters

Ventilouvres

Automobile Turntables

M. E. HAMMOND
PACIFIC BUILDING SAN FRANCISCO

FIRST FEDERAL TRUST COMPANY

A Savings Bank affiliated with *The First National Bank of San Francisco*

POST & MONTGOMERY STS.
San Francisco

Blackboards

First Grade Natural Slate
Green or Black Composition Board
School Furniture and Supplies

Estimates Given for Complete Installations

STEWART SALES CO.
247 Rialto Building, San Francisco, Cal.

Carey
BUILT-UP ROOFING

Pipe and Boiler Coverings
Asbestos Roofing
Elastite Expansion Joints
Carey Fibre Roof Coating
Asfaltslate Shingles
JONES BROTHERS ASBESTOS SUPPLY COMPANY, INC.
512 Second Street, San Francisco
Telephone, Garfield 156

DAVID E. KENNEDY
Incorporated Established 1899

CORK TILE FLOORS
EVERLASTIC TILE FLOORS
RUBBER-MARBLE FLOORS
INTERLOCKING RUBBER TILE
KENCOR BULLETIN BOARDS

San Francisco
Sharon Bldg.

Los Angeles
Story Bldg.

STANLEY
GARAGE
HARDWARE

When writing to Advertisers please mention this magazine.

CALIFORNIA ARTISTIC METAL & WIRE CO.
J. T. McCORMICK, PRESIDENT
ORNAMENTAL IRON AND BRONZE
349-365 SEVENTH ST. SAN FRANCISCO

MORTENSON CONSTRUCTION CO.
CONTRACTORS FOR STRUCTURAL STEEL AND IRON
H. MORTENSON, President
Office and Shops: Corner 19th and Indiana Streets
Phone: Mission 5033 SAN FRANCISCO, CAL.

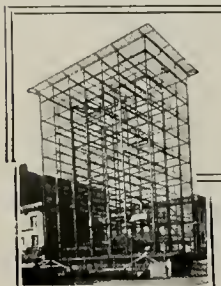
JUDSON MANUFACTURING COMPANY
Main Office:
817-821 FOLSOM STREET
Telephone Sutter 6820
SAN FRANCISCO
Structural Steel and Iron Work
Works:
OAKLAND—EMERYVILLE
CALIFORNIA
Telephone Piedmont 229

Federal Ornamental Iron & Bronze Co.
Bank Counter Screens and Grille Work Our Specialty
Most Modern Equipment Throughout
Recent Contracts: BANK OF ITALY, FIRST NATIONAL BANK
16th Street and San Bruno Avenue, San Francisco Phone Market 1011

HERRICK IRON WORKS
STRUCTURAL STEEL
Office and Works, 18th and Campbell Streets
Oakland, Cal. Phone Lakeside 1460

Telephone Mission 58 A. A. DEVOTO, President
CENTRAL IRON WORKS, Inc.
STRUCTURAL STEEL
Office 2050 BRYANT STREET SAN FRANCISCO, CAL.

C. F. HOFFMAN L. W. FLIEGNER
Golden Gate Iron Works
STRUCTURAL STEEL AND ORNAMENTAL IRON CONTRACTORS
Howard and 11th Streets San Francisco



SCHRADER IRON WORKS, Inc.
STRUCTURAL STEEL CONTRACTORS
Fire Escapes, Waterproof Trap Doors, Ornamental Iron Work
1247-1249 HARRISON STREET SAN FRANCISCO, CAL.
Bet. 8th and 9th Telephone Market 337

When writing to Advertisers please mention this magazine.

CHRISTMAS GREETINGS!

To Architects, Builders and the Plumbing Trade,
we extend our hearty wishes for a
MERRY CHRISTMAS, PROSPEROUS AND HAPPY NEW YEAR

HAWS SANITARY DRINKING FAUCET CO.
BERKELEY, CALIFORNIA

George S. MacGruer
Robert M. Simpson
} Members of Builders Exchange

MacGruer & Simpson

CONTRACTING PLASTERERS
PLAIN AND ORNAMENTAL

Cement, Stucco and Artificial Stone

Phone Garfield 512 — 266 Tehama Street, San Francisco

JOHN TRAYNOR — CHARLES HARCOURT

OCEAN SHORE IRON WORKS

Manufacturers of
BOILERS, STEEL TANKS, STEEL PLATE SPECIALTIES

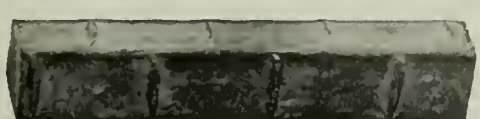
Dealers in
BOILERS, TANKS, PUMPS, ENGINES
GENERAL MACHINERY, ETC.

Office and Works:
550-558 EIGHTH STREET

Phones Market 462 and 463
SAN FRANCISCO, CAL.

OPEN HEARTH

REINFORCING STEEL BARS



Square Deformed—Immediate Shipment—Cut to required lengths

PACIFIC COAST STEEL COMPANY

Sales Office, Rialto Building SAN FRANCISCO Phone Sutter 1564

BUTTE ELECTRIC AND MFG. CO.
PAUL BUTTE, Owner
HIGH GRADE ELECTRICAL INSTALLATIONS
FEDERAL ELECTRIC BANK PROTECTION SYSTEMS
DOUGLAS 145 Moved to 956 Folsom Street San Francisco

H. S. TITTLE
CONTRACTING ELECTRICAL ENGINEER
85 COLUMBIA SQUARE, SAN FRANCISCO Phone HEMLOCK 2865

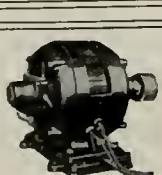
To Be "Low Bidder" Not Always Our Aim
"QUALITY AND SERVICE ALWAYS"
Our nation-wide organization and large experience in this field assure you always of fair estimates and absolute satisfaction. Electrical Appliances
F. E. NEWBERY ELECTRIC CO.
Alta Building, 381 Bush Street, San Francisco Phone Sutter 6361

San Francisco, Cal. Oakland, Cal. Los Angeles, Cal.
NE PAGE, McKENNY CO.
Electrical Engineers and Contractors
Phone Sutter 2369 589 Howard St., San Francisco, Cal.

BERKELEY ELECTRCIAL COMPANY
ELECTRICAL CONTRACTORS—FIXTURES
2142 Center St. PHONE BERKELEY 8747 Berkeley, Calif.

STANDARD SUPPLY COMPANY
BUILDING MATERIAL AND FUEL
OAKLAND ALAMEDA BERKELEY
Main Office and Yard—Standard Ave., near Webster St., Alameda
Telephone Lakeside 8270

PHONE KEARNY 1954
DECKER ELECTRICAL CONSTRUCTION CO.
149 NEW MONTGOMERY STREET
SAN FRANCISCO



Browne-Langlais Electrical Construction Co.
Agents for
ROBBINS and MYERS MOTORS, PACKARD MAZDA LAMPS
313 FIFTH STREET, SAN FRANCISCO
Telephone Douglas 976

1828—MOTT—1923

Architects and their clients are invited to visit our show rooms, 553-555 Mission St. San Francisco, D. H. Gulick, manager.

MOTT COMPANY
of California

DOUGLAS 2046 FELIX BUTTE

BUTTE ELEC. EQUIPMENT CO.

Trade Mark BEECO Registered

ELECTRICAL CONTRACTORS

530 FOLSOM STREET SAN FRANCISCO

L. SIEBERT DESIGNERS AND MANUFACTURERS OF J. GENSLER

SWITCH BOARDS · PANEL BOARDS
PROTECTIVE POWER PANELS

Drendell Electrical and Mfg. Co.

DEMCO

1345-47
HOWARD STREET
SAN FRANCISCO,
CALIF.

PHONES
MARKET 1753
1754

MUELLER

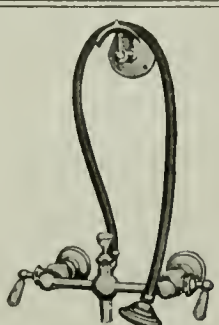
Faucets give full value in wear and service.

The MUELLER COMBINATION SINK FAUCET is especially desirable—Hot, Cold or Tempered water through spout or spray?

THE NEWEST AND BEST THING IN FAUCETS

H. MUELLER MFG. CO.

1072-76 HOWARD STREET SAN FRANCISCO, CALIF.



When writing to Advertiaers please mention this magazine.

MILLER FOLDING IRONING BOARD

ELIMINATES WALL CABINET—IS INSTALLED IN KITCHEN CUPBOARD

NO { PLASTER GROUNDS / CASING OR PAINTING

SAVES { WALL SPACE AND LABOR / TIME AND MATERIAL

Exhibited and sold by { LANNOM BROS. MFG. CO / 362 Magnolia St., Oakland, Calif.

Send for Catalogue to { W. N. MILLER / 844 Thirteenth St., Oakland

PACIFIC ELECTRIC CLOCK CO.

J. J. Estabrook

Manufacturers and distributors of Electric Clock Systems and Time Keeping Devices for Schools, Public and Private Buildings. Plans and Specifications prepared by competent engineers without charge.

86 THIRD STREET
SAN FRANCISCO, CALIF.

C. F. STAUFFACHER, President — A. A. STAUFFACHER, Vice-President

THE FINK & SCHINDLER CO.

Manufacturers of INTERIOR WOODWORK AND FIXTURES
BANK, OFFICE AND STORE FITTINGS
SPECIAL FURNITURE

218-228 THIRTEENTH STREET, Bet. Mission and Howard Sts. — SAN FRANCISCO, CAL. Telephone Market 474

QUALITY **ARISTO PAINTING CO.** RELIABILITY

SPRAY PAINTING

COMMERCIAL AND INDUSTRIAL PAINTERS

Phone Douglas 4779 — 39 Tehama Street, San Francisco — Roofs Repaired

ERNEST HELD, General Manager

HOME MANUFACTURING CO.

BANK, STORE AND OFFICE FITTINGS
FURNITURE AND HARDWOOD INTERIORS
CABINET WORK OF EVERY DESCRIPTION

543 and 545 BRANNAN ST. Phone Kearny 1514 San Francisco, Cal.

Mullen Manufacturing Co.

BANK, STORE AND OFICE FIXTURES—CABINET WORK OF GUARANTEED QUALITY—CHURCH SEATING

Office and Factory:
Telephone Market 8692 — 64 Rausch St., Bet. 7th and 8th Sts. San Francisco

JAMES L. McLAUGHLIN

GENERAL CONTRACTOR

Phones Douglas 6645—6646 — 251 KEARNY STREET, SAN FRANCISCO

Dolan Wrecking & Construction Co.

(D. J. DOLAN)

Lumber, Lath, Nails, Shingles, Doors, Windows and Plumbing Supplies, New and Second Hand

Phone Market 4264 — Office and Yard, 1607-1639 MARKET ST., SAN FRANCISCO

Fire Protection Corporation

Engineers and Contractors

FOR

Automatic

Sprinkler Systems

315 Montgomery St. San Francisco, Cal.

Phone Sutter 2993

Phone Doug. 3123-4 Oak. 5050-1

EASYSET

STORE FRONTS

GLASS OF ALL KINDS

Mirrors Art Bevel Plate

Cobbledick-Kibbe Glass Co.

666-668 HOWARD ST.
SAN FRANCISCO, CAL.

WASHINGTON AT THIRD ST.
OAKLAND, CAL.

WIRING

CONTRACTORS

CENTRAL ELECTRIC CO.

AND DEALERS

177-179 Minna Street, San Francisco

Phone Douglas 4832

A BETTER IRON

TONCAN METAL

Phone Douglas 3775

United Alloy Steel Corporation

CANTON, OHIO

Black Galvanized and Blue Annealed Sheet

WESTERN SALES OFFICES

Santa Fe Building, San Francisco

LOS ANGELES
528 Title Insurance Bldg.

PORTLAND
301 Henry Building

REMILLARD BRICK CO.

Est. 1869

Manufacturers

COMMON BRICK

332 Phelan Building
San Francisco, Calif.

Plants: San Jose, Pleasanton

The Fidelity and Casualty Company of New York

CASUALTY INSURANCE
and SURETY BONDS

California Office
Balfour Building San Francisco

Assets, $27,000,000; Surplus, $7,000,000

JOHNS-MANVILLE, Inc.

of California

SERVICE TO ARCHITECTS

Architectural Acoustics and Sound-Proofing, "Colorblende" Asbestos Shingles, Asbestos Prepared Roofings, Asbestos Built-up Roofings, Mastic Industrial Flooring, Keystone Hair Insulating and Sound-Deadening.

JOHNS-MANVILLE SERVICE

COVERS THE CONTINENT

JOHNS-MANVILLE, Inc.
of California

DISPLAY ROOM
500 POST STREET
San Francisco

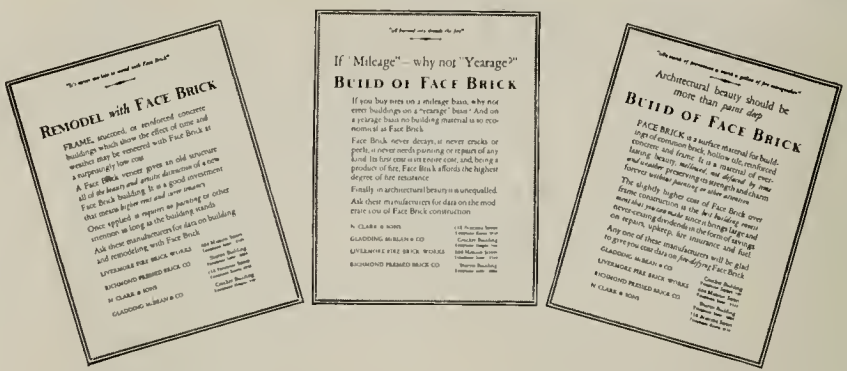
"BLAZING" THE TRAIL

We've been doing it for many years—giving the Sportsman Better Value for Quality than he ever before received. "Value at a Fair Price" in everything for the Sportsman.

The Ellery Arms Company

583-85 MARKET ST
SAN FRANCISCO, CAL

SEND FOR CATALOG *The Sign of Quality*


REMODEL with FACE BRICK
If "Mileage"—why not "Yearage?"
BUILD OF FACE BRICK
Architectural beauty should be more than paint deep
BUILD OF FACE BRICK

299,755 Bay Cities People being told about Face Brick

The Face Brick interests of the Bay Cities are telling the public, through the newspapers, the advantages of Face Brick construction, its architectural distinction and charm, its lasting satisfaction, and its fundamental economy.

The Architect is seeing the results of this intensive educational work in the receptive attitude of his clients toward Face Brick.

We shall be glad to send to any interested architect a complete file of these Face Brick advertisements.

LIVERMORE FIRE BRICK WORKS
604 Mission Street — Telephone Sutter 4345

RICHMOND PRESSED BRICK CO.
Sharon Building — Telephone Sutter 4884

Members
American Face Brick Association

through whose courtesy this space in Architect and Engineer is made available.

Look for this Trademark

And if it's there don't worry any more about your Valves and Fittings

Specify and insist upon having

The Kelly & Jones Co. Valves and Fittings

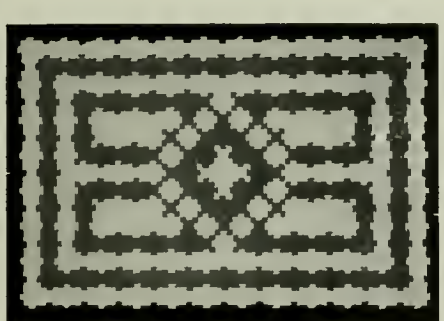
Byers Genuine Wrought Iron Pipe

Republic Steel Pipe

Complete Line of Plumbing Supplies
Large Stocks for Prompt Delivery
Catalogue on request

California Steam & Plumbing Supply Co.

671-679 Fifth Street, Corner Bluxome
SAN FRANCISCO CALIFORNIA



INTERLOCKING RUBBER TILING

The Elevator Floor

whether in Office Building, Hotel or Department Store, is subjected to a great deal of wear and tear.

—SPECIFY—

INTERLOCKING RUBBER TILING

and you've provided your client's building with a Durable, Economical, Practical material that is sure to give satisfaction. Twenty tons installed in the Standard Oil Building, San Francisco. Stock on hand for immediate delivery.

NEW YORK BELTING AND PACKING CO.

NEW YORK

San Francisco Branch 519 MISSION ST. Phone Douglas 1837

Small booklet of designs mailed on request

VIEW AT NILES PLANT

CRUSHED ROCK
GRAVEL **For Building and Road Construction**
SAND **COAST ROCK AND GRAVEL CO.**

500 Call Building SAN FRANCISCO Phone Sutter 3990

Plants at Niles, Fair Oaks, Oroville, Eliot, Piedra, Solo, and Marysville

THE WORLD'S WORD FOR ELEVATOR SAFETY

The Architect who specifies OTIS ELEVATORS may do so with the assurance that the responsibility of the Otis Elevator Company extends beyond satisfactory installation. Buildings equipped with OTIS ELEVATORS enjoy the advantage of prompt service and careful inspection rendered by over a hundred Otis offices.

OTIS ELEVATOR COMPANY

2300 STOCKTON ST. SAN FRANCISCO

OFFICES IN ALL PRINCIPAL CITIES

Merry Christmas to you

And may Fate, as she draws up the plans and specifications that will govern you and yours during 1924, make due allowance for health, success and the fullest enjoyment of life.

Specify SAN-A-COTE

The two-coat Semi-Gloss Finish for rough and smooth plaster interior walls, Wall Board and Metal ceilings, can be used on any type of construction. After years of experience, we can assure you that it has no competitor. It is the first and the last word in Wall Finish and will stand the "Acid Test."

We maintain a special Laboratory Department for preparing specifications to govern special cases.

If used according to our system, we guarantee SAN-A-COTE as per our specifications and special printed directions.

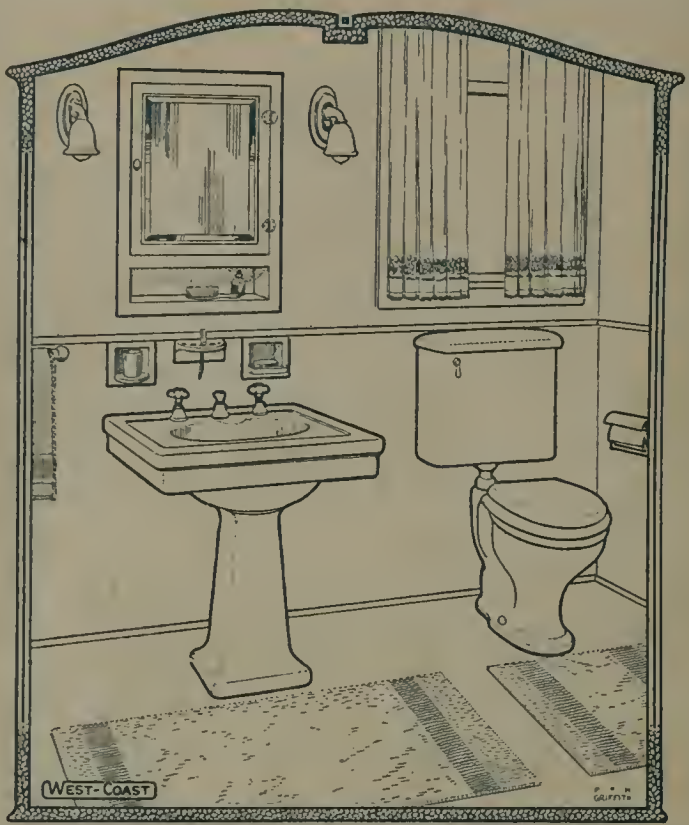
We invite correspondence when you desire more information regarding the use of this material.

THE BRININSTOOL CO.

"THE WALL FINISH SPECIALISTS"

908-910 So. Main St.
Los Angeles, Calif.

Southern Warehouse 2710 16th St.
San Francisco, Calif.



"West Coast" Two-Fired Vitreous China Pedestal Lavatory, Closet and Tank

Better Service *from* Better Plumbing Fixtures

The difference in cost between the best grade of plumbing fixtures and those made to meet a price is really very small. Yet the difference in service and satisfaction is worth many times the extra cost.

"West Coast" Plumbing Fixtures are made to meet the highest standard of quality and are fully guaranteed against defects in materials or workmanship.

The "West Coast" label is placed only on first quality, two-fired vitreous china plumbing fixtures. It is your assurance of lifelong service.

WEST COAST Porcelain Manufacturers

Wells Fargo Building, San Francisco

Plant, Millbrae, California